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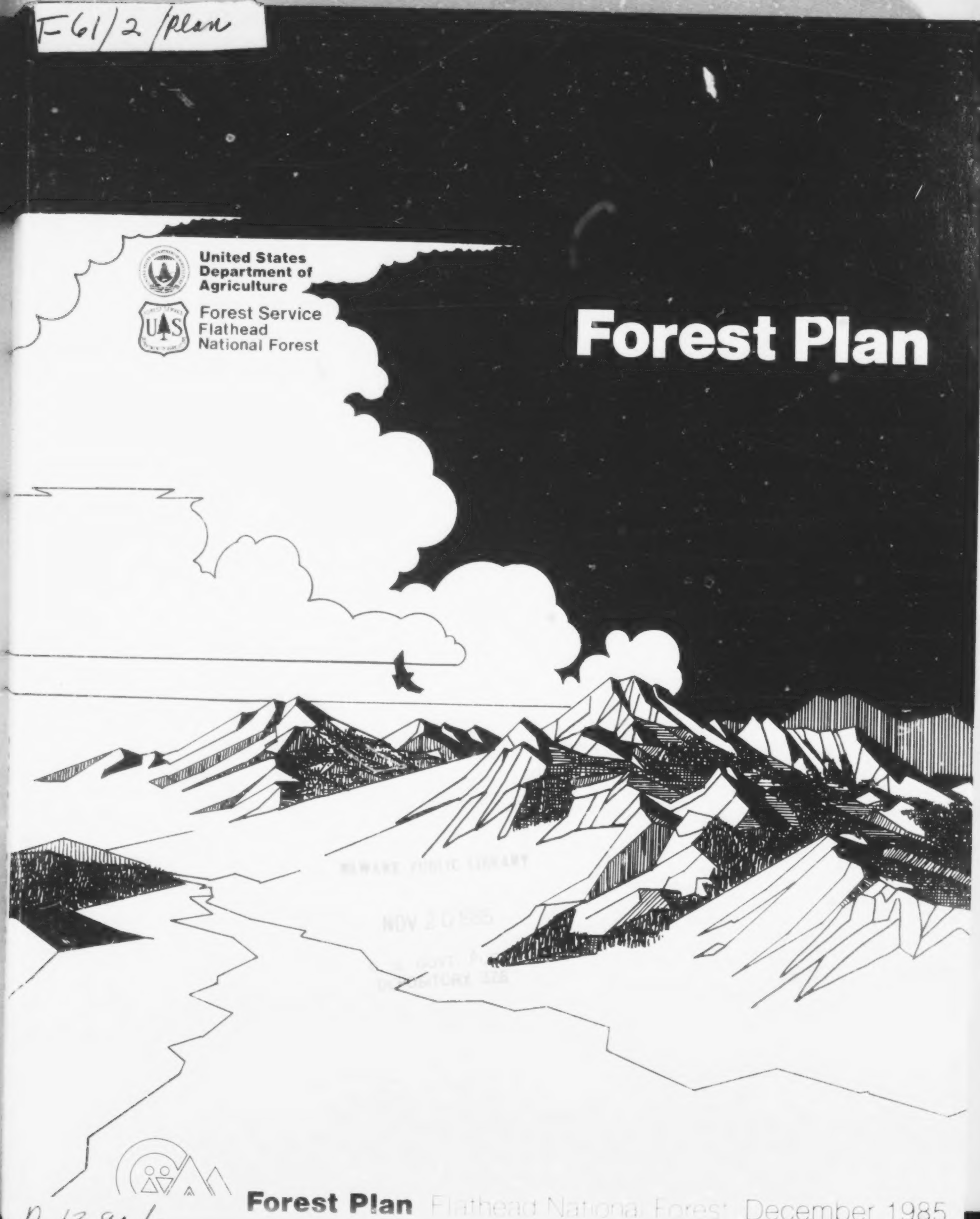

United States
Department of
Agriculture

Forest Service
Flathead
National Forest

# Forest Plan

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**Forest Plan** Flathead National Forest December 1985

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For further information about the Forest Plan, contact the following offices:

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1335 Hwy. 93 West
Whitefish, MT 59937

**SUPERVISOR'S MESSAGE**

I am pleased to transmit the Flathead's first Forest-wide Land and Resource Management Plan. This comprehensive document provides management direction for the next 10-15 years.

It reflects 5 years of intensive effort by hundreds of Forest Service employees and thousands of citizens. The Plan is a better document because of this extensive involvement by such a wide array of citizens.

Basic Plan development was guided by the following National policy:

> "It is the policy of the United States, that the Nation's forested land, except such public land that is determined by law or policy to be maintained in its existing or natural state, should be managed at levels that realize its capabilities to satisfy the Nation's need for food, fiber, energy, water, soil stability, wildlife and fish, recreation, and esthetic values..."

Inherent in this National policy is the need for long-term land stewardship: to demonstrate leadership in Forest land conservation, provide public service, and provide "the greatest good to the greatest number in the long run".

Ed Brannon

EDGAR B. BRANNON, JR.
Forest Supervisor

READEX FICHE

**PREFACE**

The Flathead National Forest Land and Resource Management Plan (Forest Plan) provides integrated management direction for each resource on the Forest. The Proposed Action in the Plan is based on the analysis and selection of an alternative described in the accompanying EIS (Environmental Impact Statement) as the Preferred Alternative.

The Forest Plan is in compliance with NFMA (the National Forest Management Act of 1976); the regulations for National Forest Land and Resource Management Planning (36 CFR Part 219); and NEPA (the National Environmental Policy Act of 1969), including the Record of Decision for the Environmental Impact Statement covering the Forest Plan.

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AA. Recreation Opportunity Spectrum (ROS) User's Guide
BB. Appendix to Management Area 18
CC. National Forest Landscape Management - Vol. II "The Visual Management System"
DD. Montana Cooperative Elk Logging Study
EE. Management Standards for Indicator Fish Species (Bull Trout, Cutthroat Trout) on the Flathead National Forest, 1985
FF. State of Montana Water Quality Standards
GG. Environmental Assessment of Nonwilderness National Forest Lands - Oil and Gas Leasing on Flathead National Forest
HH. Technical Guides for Soil Compaction
II. 10-Year Tree Improvement Program
JJ. Big Mountain Resort Area Master Plan, 1984
KK. The Limits of Acceptable Change (LAC) System for Wilderness Planning, 1985
LL. Wilderness Fire Plan, Phase II, for the Great Bear and Bob Marshall Wildernesses, 1983

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# I. Introduction

## PURPOSE

The Forest Plan guides all natural resource management activities and establishes management standards for the Flathead National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.

The purpose of the Forest Plan is to provide long-term direction for managing the Flathead National Forest. This Plan will be revised every 10-15 years, with interim amendments as needed.

As displayed in this document, the Forest Plan provides two levels of direction: general Forest-wide management direction and specific direction for each management area. Direction is described in terms of management goals, objectives, and Forest-wide and Management Area Standards. The Forest Plan also specifies monitoring and evaluation.

The Forest Plan is structured as follows:

Chapter I provides an introduction to the Forest planning process.

Chapter II contains the Forest-wide multiple-use goals, objectives, and standards that apply to the Flathead National Forest.

Chapter III provides a description of each Management Area and the direction for management. Chapter III also presents the monitoring and evaluation requirements for each management area. Forest-wide monitoring requirements (Chapter V) will be implemented to indicate how well planning assumptions, goals, and objectives are being met as well as what the environmental effects of implementation actually are.

Chapter IV contains a discussion of the Geographic Units. Each of these units is mapped and physical, biological, and social characteristics of the area are briefly discussed. In addition, expected management activities are displayed.

Chapter V outlines implementation of the Forest Plan. This chapter focuses on implementation problems, provides guidance for using this document in project planning, and outlines implementation of the Forest Plan Monitoring Requirements.

Chapter VI presents a summary of the "Analysis of the Management Situation." Included in this chapter are:

- an assessment of the current Forest program,
- an assessment of the Forest's potential to produce different amounts of goods and services,

-- an evaluation of public "demand" for Forest resources, and

-- identification of opportunities and need for change of current management.

This chapter also compares the Forest Plan to current management direction and to the supply potentials of the Forest.

Chapter VII is a glossary.

The appendices contain management direction and other material necessary to understand and use the Forest Plan.

Additional information is incorporated through references. Most of this information is available through the Flathead National Forest Planning Records. These records are available for review at the Flathead National Forest Supervisor's Office, Kalispell, Montana.

## MANAGEMENT DIRECTION

The goals, objectives, standards, schedule of management practices, and monitoring and evaluation requirements comprise the Plan's management direction; however, the projected outputs, services, and rates of implementation are dependent on the annual budget.

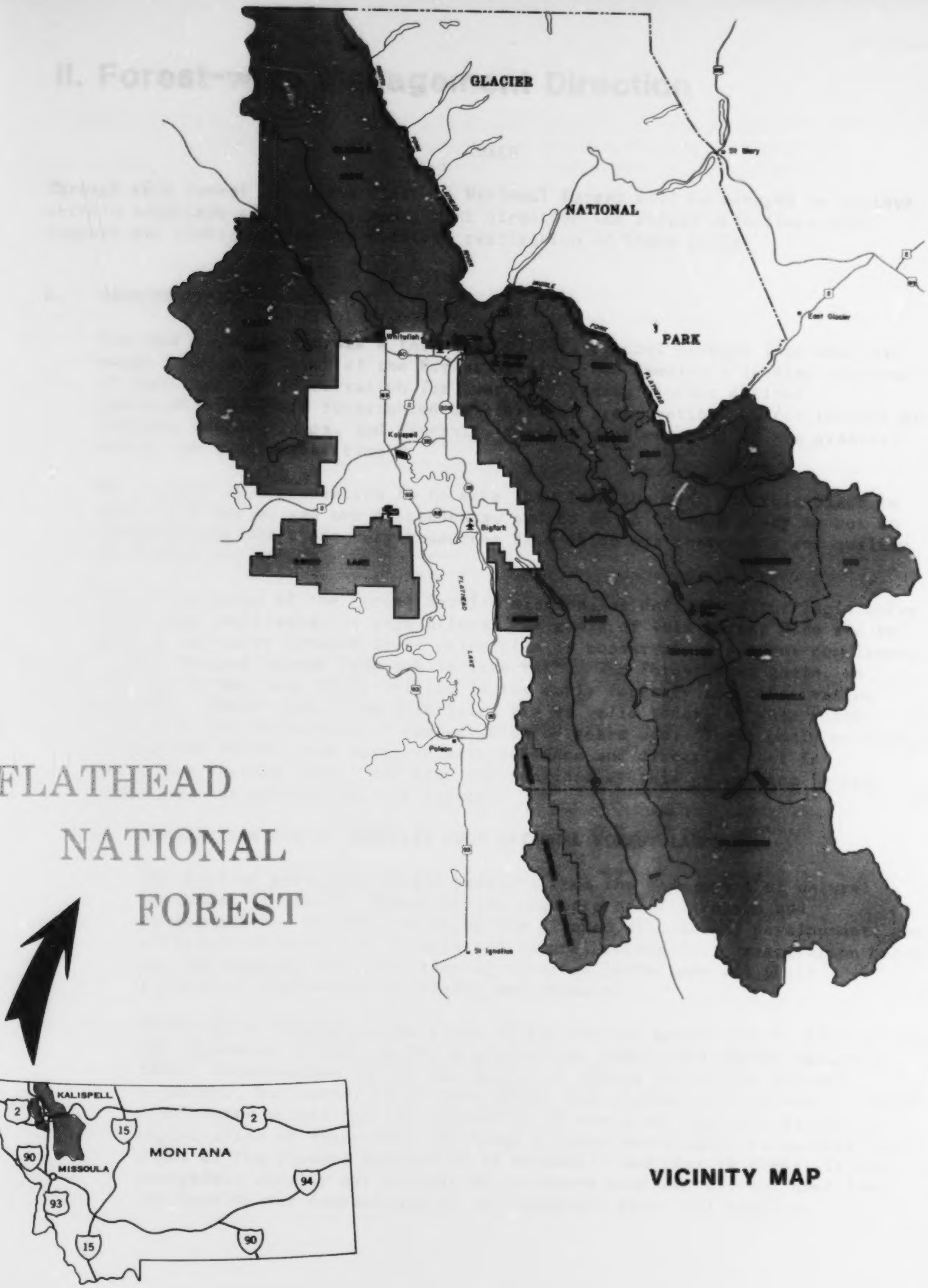
## RELATIONSHIP TO OTHER DOCUMENTS

### A. ENVIRONMENTAL IMPACT STATEMENT -

The Forest Plan is based on the various considerations which have been addressed in the accompanying EIS (Environmental Impact Statement), and represents the Preferred Alternative in that EIS. The planning process and the analysis procedure used in developing this Plan, as well as the other alternatives that were considered, are described or referenced in the EIS. Project level activities will be planned and implemented to carry out the management direction in this Plan. The NEPA (National Environmental Policy Act) requirements will be followed as the site specific issues and impacts are addressed during project development.

### B. REGIONAL GUIDE -

The Regional Guide (issued June 10, 1983, by the Regional Forester) displays the Northern Region's portion of the RPA (Rangeland Renewable Resources Planning Act) Program among the National Forests, provides direction for National Forest plans, and develops standards and guidelines for addressing major issues and management concerns which need to be considered at the Regional level to facilitate Forest planning. The Regional Guide process allows for discussion and analysis of National Forest program capabilities to determine opportunities to meet short- and long-term natural resource demands.


GLACIER
NATIONAL
PARK
St Mary
East Glacier
Whitefish
Kalispell
Bigfork
FLATHEAD LAKE
Polson
St Ignatius
2
15
90
93
94
KALISPELL
MISSOULA
MONTANA

FLATHEAD
NATIONAL
FOREST

**VICINITY MAP**

# II. Forest-wide Management Direction

## GOALS

Through this Forest Plan, the Flathead National Forest will be managed to achieve certain long-term goals. All management direction and Forest objectives must support and contribute to the eventual realization of these goals.

### A. MANAGEMENT PHILOSOPHY

The word conservation was a term that Gifford Pinchot brought into everyday usage. As first Chief of the Forest Service, and America's leading advocate of environmental conservation for over fify years, Pinchot defined conservation as "the foresighted utilization, preservation, and/or renewal of forests, waters, lands, and minerals, for the greatest good of the greatest number for the longest time."

The purpose of conservation is to make this land the best possible place to live, both for us and our descendents, and to do so in such a way as not to impair or degrade those very resources from which our sustenance and quality of life is derived.

Within the scope of the Forest Service mission, as defined by the legislative record and administrative regulations, the goals of this Forest Plan are to realize and carry forward these principles of conservation and our commitment to what Pinchot termed "the public interest". The Forest Plan goals, as outlined below, have their origins in the early forestry and conservation movement. Their underlying principles are as valid today, as when Pinchot formulated his definition of conservation 80 years ago. These goals provide current and future land managers with guidance and direction that is consistent through time. How they are realized by this generation is our challenge, our obligation, our legacy.

#### 1. PROVIDE FOR PUBLIC BENEFITS FROM NATIONAL FOREST LANDS

The goal of providing public benefits from the management of natural resources is closely linked to the concepts of utilization and preservation. Utilization being the planned allocation, development, and efficient distribution of selected natural resources. Preservation being the safekeeping and protection of selected landscapes and their associated communities of plants and animals.

Utilization recognizes the right of the present generation to develop and use resources to provide for a prosperous, happy, and secure national life. Conservation is not the denial of access to all our natural resources, but rather their foresighted and planned utilization. Planned development stands for the prevention of waste and the unnecessary exploitation of resources. Although planned development recognizes the right of the present generation to prudently use what it needs, it also recognizes equally our obligation to insure that our current need does not deprive our descendents of the resources they will require.

Associated with resource development and use are physical and visual changes in the Forest environment. These planned changes or modifications are described in this Forest Plan, and their results will be measured and monitored during the Plan period. Public participation in the planning process was instrumental in determining what levels of change and modification are appropriate, and what the overall direction of Forest management should be.

Not all public benefits derived from the Forest will visually affect or modify the land, in fact those that do represent only a small portion of the total Forest. Benefits from the Forest represent long-term resource values that are expressed and measured in both priced and non-priced terms. Utilization and development lend themselves to the quantitative. Preservation, protection, or appreciation of the natural world tend to be qualitative. Balanced resource management is both, thus the benefits derived, whether priced or non-priced, are consistent with Forest Service mandates and the principles of conservation.

## 2. LONG TERM STEWARDSHIP OF THE LAND

Public benefits from natural resource management are only possible if the basic land resources of soil and water are sustained through time. To realize this goal, our attention must be focused both on the present and the future.

Commitment to long-term stewardship is demonstrated by strong and visible sensitivity to the land in our on-the-ground management activities. Management activities that are sensitive to the land are in harmony with nature and provide for and maintain a healthy environment.

The overriding indicators that reflect the quality of the Forest environment and the long-term productivity of these lands are soil and water. Foremost consideration must be given to these resources when considering social needs and public benefits.

History has shown us that public and social needs change over time, and that these needs may not always be compatible with good land stewardship. These situations require land managers to make decisions that interpret present versus future needs.

When considering the goal of long-term stewardship, we must recognize the fact that man's ability to predict and control his physical environment is limited. Natural processes are continually at work that change and modify vegetative patterns and landforms. For the most part these changes occur relatively slowly when measured in terms of years or decades; however, the potential for sudden and dramatic change is always present. Natural catastrophic events do occur and will continue to occur. The impacts of these events on our efforts at proper land stewardship can be far reaching. In some situations, effective management measures can be implemented to mitigate the dangerous or undesirable effects of these occurences, but in other circumstances these events will continue uninfluenced by the desires of recource managers.

Another dimension of catastrophic impacts on the natural environment are those induced or precipitated by the actions of man. There is no question that man-caused disasters or environmental abuses have left their ugly and deleterious imprints on the land. The goal of long-term stewardship demands that any human activities that degrade or impair soil and water resources be eliminated or controlled.

## 3. LEADERSHIP IN FORESTRY

The first scientifically trained foresters in America came from Europe. They brought with them a strong conservation ethic and practical experience in forest management. Through their efforts scientific forestry in America had its modest beginning. Forestry schools were established, and professionally trained graduates joined the ranks of lumbermen, developing state forestry organizations and the newly formed Forest Service. Through these federal foresters the principles of scientific forest management were applied to the diverse and expansive landscapes comprising the National Forest System.

Application of forest management on these lands required the coordination, commitment and technical competence of many diverse disciplines. Through these combined efforts, professional leadership in forest management became an ideal, or goal, that continues to motivate and inspire professional excellence from the many disciplines that comprise the practice of modern forestry.

Modern forestry is truly an interdisciplinary task. This integration of technical skills and scientific knowledge brings with it professional ethics and conduct that are in some ways unique or exceptional to each discipline.

How successfully these disciplines are merged together, and yet still effectively contribute their own individual qualities and expertise, is dependent upon a unifying commitment to long-term stewardship.

Leadership in forestry is application of science and technology to solve problems of human need, and environmental degradation. Leadership in forestry is a commitment to the principles of conservation. It can only be achieved when those diverse parts of the social, physical, and biological sciences can be collectively marshalled to meet the needs of both the human and forest communities.

## 4. COMMITMENT TO PUBLIC SERVICE

The preceding goals all contain strong elements of Forest Service commitment to public service. Efforts by this agency and this Forest, to make these goals a reality is a sincere expression of our commitment to manage public lands for the benefit of the American people in a manner that is compatable with long-term environmental quality.

## Goals

Commitment to the ideal of public service is a value deeply ingrained in Forest Service tradition. Early in this century when Gifford Pinchot and Theodore Roosevelt established the Forest Service they recognized the close association between what they termed the "public interest" and the concept of clean and efficient public service. These values, directly traceable to the social and moral attitudes held by Pinchot and Roosevelt, became federal policy and administrative direction for the early Forest Service. This deep sense of social responsibility and service to the public was shared by many of their associates, and was instilled in and subscribed to by succeeding generations of Forest Service employees.

Today this commitment to public service is still a value strongly held and cherished by most Forest Service personnel. This commitment to public service, however, has become increasingly questioned and challenged by members of the public and representatives of the special interest groups. These challenges have become most vociferous when Forest Service actions or proposals have, or are perceived to have, an adverse impact on a particular resource or value held by these individuals or groups.

As evidenced by the recent volume of public comment to this Plan, there exists a wide range of opinion as to how these National Forest System Lands should be managed and for what purposes. Clearly there is no public concensus on what proposed direction represents a balanced approach to Forest management.

In recent years many Forest Service employees have found it increasingly difficult to determine if their own professional actions or agency policies are in concert with public desires and resource needs. Controversy and bitterly divided public opinion has created a situation where agency activities are viewed, by what seems to be an ever increasing array of special interest groups, as inadequate, inappropriate, or even detrimental to the very resources we are responsible to manage. This assault has raised doubts, both within the agency and externally, concerning Forest Service responsiveness to public input and even responsible resource management.

None of this should be surprising or disappointing. National Forest management was born of controversy and conflict and will continue to be the focus of intense public and private scrutiny. It's our feeling that this close involvement by the public is fair and proper. The "public interest" has been, and will continue to be, best served by active and informed public participation.

Recognition of Forest Service commitment to professional and conscientious public service is rarely bestowed upon the agency by those who feel their interests are being adversely affected by our actions. Gratification and reward for a job well done, pride in technical and professional competence, and the feeling of self worth associated with commitment to ideals, principles and goals must come from within. These attributes can be fostered and encouraged by peers and colleagues. They are occasionally applauded by the public, but always it is dependent upon us as individuals to discover, share, and perpetuate that commitment.

## B. RESOURCE GOALS

In light of the Forest Service policy on multiple-use management, the Flathead National Forest will attempt to strike a balance among resources to achieve the following goals:

### 1. THREATENED AND ENDANGERED SPECIES

Provide sufficient habitat for a recovered population of grizzly bears, gray wolves, bald eagles, and peregrine falcons.

### 2. WATER QUALITY AND FISHERIES

Maintain high quality water which meets or exceeds State and Federal water quality standards to protect migratory and resident fisheries, water-based recreation opportunities, and public water supplies.

### 3. TIMBER

Provide a sustained yield of timber products that is cost effective, responsive to the needs of the local economy, and is consistent with other Forest management goals.

### 4. BIG GAME

Maintain and, where appropriate, improve the habitat over time to support increased populations of big-game wildlife species.

### 5. ROAD MANAGEMENT

Develop and implement a road management program, with road use restrictions and closures, that is responsive to resource protection needs and public concerns.

### 6. WILDERNESS

Intensify management of the Forest's three Wildernesses and the Flathead Wild and Scenic River System to ensure resource protection while providing quality recreation opportunities.

### 7. MINERALS

Facilitate exploration for, and the orderly and efficient development of, minerals and energy resources, recognizing the need for balanced multiple-use management.

### 8. RECREATION

Provide a range of quality outdoor recreation opportunities within a forest environment that can be developed for visitor use and satisfaction.

Provide a range of quality recreation opportunities, including motorized and nonmotorized, in an undeveloped forest environment.

## OBJECTIVES

Forest objectives are concise, time-specific statements of measurable planned results intended to respond to the Forest goals. Specific activities to accomplish these objectives are listed in Appendix M. A further understanding of the management direction can be attained by also reading the Forest-wide goals and standards in this chapter along with the management area goals and standards in Chapter III. The Flathead National Forest objectives are as follows:

### A. RESOURCE MANAGEMENT OBJECTIVES

#### 1. RECREATION

a. **Developed Recreation** - Bring all developed sites up to full-service level by 1995.

b. **Trails** - Provide a system of trails in a variety of settings. Construct or reconstruct about 50 miles by 1995.

c. **Wild and Scenic Rivers** - Implement visitor management for the Wild and Scenic River System on the Flathead National Forest during 1986. (See Management Area 18 standards.)

#### 2. VISUAL QUALITY

a. **Rehabilitation** - Using appropriate landscape management tools, study and implement, if possible the rehabilitation of three areas in the Noisy Face Geographic Unit not currently meeting visual quality objectives. These areas are as follows: (1) Peterson/Patterson Creek, (2) Mill Creek, and (3) Trail Creek.

b. **Enhancement** - During the first decade, implement projects proposed by the Plan for the west side of Hungry Horse Reservoir road (see Appendix M). Complete approximately 1,875 acres of this vegetative management by the year 1995 to enhance the recreation and visual experience.

By 1995 update the landscape management procedures for the Swan Highway and implement projects to enhance the viewing and recreation experience along the highway.

#### 3. WILDERNESS

Receive approval on the standards developed through the Limits of Acceptable Change process in the Bob Marshall, Great Bear, and Scapegoat wildernesses during 1986. Begin implementation by 1987.

## 4. WILDLIFE AND FISH

Complete Grizzly Bear Habitat Component Analysis for the Trail Creek Grizzly Bear Management Area (MA 11) and the Bunker Creek area of the Spotted Bear Ranger District (MA 11A) prior to implementation of management activities.

## 5. RANGE

Inventory, map, and complete an activity schedule for five significant noxious weed plant communities during the first planning period (Spotted Knapweed, Dalmation Toadflax, Leafy Spurge, Goatweed, and Whitetop.)

## 6. TIMBER

a. **Treatments** - Program the following treatments during the first decade:

(1) Regeneration harvest on 66,080 acres
(2) Reforestation on 66,080 acres
(3) Intermediate harvest on 25,300 acres (sanitation, salvage, and commercial thinning)
(4) Selection harvest on 680 acres
(5) Slash disposal on 92,060 acres
(6) Timber stand improvement on 34,000 acres

b. **Program Management** - During the first decade, program up to the allowable sale quantity of 1 billion board feet of timber harvest from suitable lands. So that the uncut volume under contract will remain near 300 MMBF (million board feet), the annual program of sale offerings may range from 70 MMBF to 130 MMBF during this period.

In order to support the goal of providing timber offerings keyed to economic demand, the following specific objectives are established for management of programed sale offerings for the first decade:

(1) Maintain an annual sell program that will provide at least 20 MMBF in class 5 (2.0 MMBF) and smaller sales.
(2) Maintain an average annual program of nonchargeable timber offerings from unsuitable land and/or nonstandard logs of 5 MMBF per year in addition to chargeable volume from suitable lands.
(3) Maintain a mix of sale offerings for various logging systems needed to implement the Forest Plan and support local and regional logging systems capabilities.
(4) Maintain offerings of firewood and other miscellaneous forest products at least at current levels.
(5) Minimize losses from the mountain pine beetle through harvest of 28,850 acres of high and medium risk lodgepole pine stands.

Refer to Appendices E, F, H, I, and L in support of these objectives.

### 7. WATER AND SOILS

Develop watershed activity schedules for key watersheds.

Maintain an inventory of nonwilderness areas needing soil and water restoration. Complete restoration projects as funds permit.

Best Management Practices will be applied during Forest Plan implementation to ensure that Forest water quality goals will be met.

### 8. ROADS

Utilize transportation planning, which considers present and future uses, as an integral part of all project analysis to ensure appropriate road standards, minimum adverse effects on other resources, and the minimum mileage necessary of road construction/reconstruction.

All existing system and nonsystem roads will be reviewed as part of transportation planning for need, possible closure, or obliteration.

Implement a road management program that is responsive to resource protection needs, water quality goals, and public concerns. Miles of road left open to public use will be that amount necessary to meet public needs and resource management objectives.

### 9. CULTURAL RESOURCES

Meet all legal requirements each year. During the first decade, nominate significant cultural sites to the National Register of Historic Places.

## B. PROJECTED OUTPUTS AND ACTIVITIES BY TIME PERIODS

Decade 1 projected outputs and activities that will be used for programing, budgeting, and attainment reporting are displayed in Table II-1. Other decades are projected for information only. The projected outputs for Fuels Management and "Road Constr/Reconstr" for local roads are lower than those estimated for the Preferred Alternative (Alternative 17) in the EIS. The reason for the difference in road miles is that the method used to compare alternatives in the EIS assumed that an adjustment in the road miles in early decades was needed to account for connecting timber harvest units to existing roads. The Proposed Action in the Plan, however, places emphasis on salvage of lodgepole pine infested by the mountain pine beetle, much of which occurs in currently roaded areas. Emphasis is also given to cost efficient timber sale design which reduces the amount of new roads needed between harvest units and existing roads below the assumptions used in the EIS comparisons. The outputs projected for arterial and collector roads in Table II-1 are primarily reconstruction miles.

The projected budget required to implement the Forest Plan is shown in Appendix K. Appendix M contains proposed activity schedules for various resources and activities. Projects will be added to the schedules periodically as they are identified and may also be deferred or modified if, during project level environmental analysis, problems are identified (Refer to Chapter V, Section C, for a discussion of project planning).

TABLE II-1 Projected Outputs and Activities by Time Period - Flathead National Forest

| | | | Average Annual Units | | | | |
|---|---|---|---|---|---|---|---|
| Target Item | Outputs or Activity | Unit of Measure* | 1986-1995 | 1996-2005 | 2006-2015 | 2016-2025 | 2026-2035 |
| Recreation | | | | | | | |
| T01 | Developed Use | M RVD | 329 | 403 | 495 | 601 | 732 |
| T02 | Dispersed Use | | | | | | |
| | Wilderness | M RVD | 205 | 315 | 349 | 349 | 349 |
| | Nonwilderness | M RVD | 568 | 757 | 990 | 1,227 | 1,572 |
| Wildlife & Fish | | | | | | | |
| T03 | Wildlife Hab Imp | Acres | 214 | 230 | 248 | 283 | 314 |
| T04 | Fish Habitat Imp | Acres | 71 | 71 | 71 | 71 | 71 |
| T05 | T&E Habitat Imp | Acres | 200 | 200 | 200 | 200 | 200 |
| Range | | | | | | | |
| T06 | Permitted Graz Use | M AUM | 6.2 | 5.9 | 6.2 | 6.2 | 6.2 |
| T07 | Range Improvement | Acres | 350 | 350 | 350 | 350 | 350 |
| T08 | Range Res Plans (Allot Mgt Plans) | Plans | 5 | 5 | 5 | 5 | 5 |
| T09 | Noxious Weed Control | Acres | 8 | 8 | 8 | 8 | 8 |
| Soil | | | | | | | |
| T10 | Soil Inventory | M Ac. | 64 | 64 | 64 | 64 | 64 |
| Lands | | | | | | | |
| T11 | Land Exchange | M Ac. | 1.5 | 1.0 | 0.5 | 0.5 | 0.5 |
| Minerals | | | | | | | |
| T12 | Minerals Mgt | Cases | 20 | 20 | 20 | 20 | 20 |
| Timber | | | | | | | |
| T13 | Tot Vol Offered | MM BF | 100 | 106 | 111 | 119 | 152 |
| T15 | Silv Exams | M Ac. | 65.5 | 65.5 | 65.5 | 65.5 | 65.5 |
| T16-17 | Reforest - Approp | Acres | 991 | 860 | 833 | 788 | 833 |
| T18-19 | Reforest - KV | Acres | 5,617 | 4,876 | 4,720 | 4,465 | 4,719 |
| T20 | Tbr Std Imp - Approp | Acres | 2,111 | 2,111 | 3,718 | 3,168 | 3,360 |
| T21 | Tbr Std Imp - KV | Acres | 1,294 | 1,294 | 2,279 | 1,942 | 2,059 |
| T22 | Landline Location | Miles | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 |
| T44 | Fuels Mgt - BD** | Acres | 9,206 | 8,446 | 6,891 | 15,587 | 13,392 |
| Protection | | | | | | | |
| T23 | Fuels Mgt - FFP | Acres | 575 | 575 | 575 | 575 | 575 |
| Facilities | | | | | | | |
| T81-82 | Road Constr/Reconstr | | | | | | |
| | Arterial | Miles | 5 | 5 | 5 | 5 | 5 |
| | Collector | Miles | 12 | 12 | 12 | 12 | 12 |
| | Local | Miles | 51 | 37 | 30 | 72 | 54 |
| T83 | Trail Const/Reconstr | Miles | 5 | 5 | 5 | 5 | 5 |

* M = 1,000

** The reason for fuels management output being lower is due to the fact that the EIS estimate for selection harvest is felt to be too high in relation to actual acres needing treatment on-the-ground.

## C. RESEARCH NATURAL AREA OBJECTIVES

Research Natural Areas are limited to research, study, observation, monitoring, and educational activities that are nondestructive and nonmanipulative that maintain unmodified conditions (FSM 4063.02).

Regional habitat types listed in Table II-2 have been assigned through the Northern Regional Guide as the Flathead National Forest's objectives for RNA (Research Natural Area) recommendations. The table lists a candidate area(s) representive of each assigned type. Establishment reports will be prepared during the first decade for each candidate area prior to official classification as an RNA. For habitat types under investigation, the Forest will review opportunities for natural areas on National Forest System lands that would meet the Flathead National Forest's objectives for research natural areas, and after reviewing the opportunities on the Forest, candidates will be selected.

TABLE II-2 - Research Natural Area Objectives - Flathead National Forest

| Habitat Type Code | Vegetative Habitat Type* | Occurrence** | Proposed (P) or Existing (E) RNA | Total RNA Acres |
|---|---|---|---|---|
| Forested Types | | | | |
| 230 | PSME/FESC | Minor | Little Bitterroot (P) | 222 |
| 260 | PSME/PHMA | Major | Coram (E) | 839 |
| 310 | PSME/SYAL | Major | East Shore(P) | 495 |
| 410 | PICEA/EQAR | Minor | Under investigation | |
| 420 | PICEA/CLUN | Major | Swan River Island (P) | 304 |
| 450 | PICEA/VACA | Minor | Le Beau (P) | 786 |
| 520 | ABGR/CLUN | Major | Swan River Island (P) | 304 |
| 530 | THPL/CLUN | Minor | Swan River Island (P) | 304 |
| 570 | TSHE/CLUN | Major | Under investigation | |
| 610 | ABLA/OPHO | Minor | Under investigation | |
| 620 | ABLA/CLUN | Major | Tuchuck (P) | 1592 |
| 660 | ABLA/LIBO | Major | Tuchuck (P) | 1592 |
| Non-Forested Types | | | | |
| | ALPINE | Major | Tuchuck(P) | 1592 |
| | AGSP/POSA | Minor | Under investigation | |
| | FESC/AGSP | Major | Under investigation | |
| | ARTR/FESC | Minor | Under investigation | |
| | PUTR/FESC | Minor | Under investigation | |

* Vegetative descriptions are abbreviations of species names.

** Major representative in a zone.
Minor representative in a zone.

## D. ADDITIONAL DATA REQUIREMENTS AND ACCOMPLISHMENT SCHEDULE

Table II-3 identifies priority information requirements that are needed to aid in resource management decisions.

TABLE II-3 Priority Information Requirements and Accomplishment Schedule - Flathead National Forest

| Data Requirement | Data Level | Accomplishment Schedule |
|---|---|---|
| Completion of Fishery Habitat Surveys | Interagency Stream and Lake Survey Standard | 1990 |
| Riparian Zone Delineation | National Standard | 1995 |
| Water Resource Inventory | Forest Service Direction in FSM 2531 | 1986 |
| Complete Vegetation Inventory | Regional Standard | 1990 |
| Lands System Inventory and Order II Soil Surveys | Forest Standard based on project need | 2000 |
| Lands System Inventory and Order IV Soil Surveys | Regional Standard | 1990 |
| Sediment/Management Practice Model | Forest Standard | 1990 |

## RESEARCH NEEDS

Many research needs have been proposed during development of this Forest Plan, including those by concerned publics during the formal comment periods for the Draft Environmental Impact Statement documents. Listed below are those that will assist the accomplishment of the Plan. It is anticipated that other research needs will be identified during monitoring and evaluation as the Plan is implemented. They will be evaluated by the Regional Forester for inclusion in the Regional research program proposal.

-- Validate the effects of Forest management activities on the behavior, security, and habitat needs of threatened and endangered species particularly grizzly bear and gray wolf.

-- Cooperate with the Montana Department of Fish, Wildlife, and Parks and the U.S. Fish and Wildlife Service in research that validates population levels and trends for grizzly bears.

-- Validate the effects of Forest management activities on changes in water yield and sediment production as they affect bull trout reproduction in spawning and rearing streams.

-- Cooperate with the Montana Department of Fish, Wildlife, and Parks and the U.S. Fish and Wildlife Service in research necessary to further determine the status of woodland caribou.

-- Determine the effectiveness of the Limits of Acceptable Change planning and management concept as an indicator in monitoring ecosystem change and trends in wilderness use and user satisfaction in the Bob Marshall Wilderness Complex and Flathead Wild and Scenic River System?

-- Validate the effects of Forest management activities on long-term productivity of soils.

-- Determine the most effective and economical survey techniques for measuring visitor use and satisfaction by ROS (Recreation Opportunity Spectrum) class.

## DESIRED FUTURE CONDITION OF THE FOREST

This section describes what the future Forest should be like if the management direction contained in the Forest Plan is implemented. It summarizes the anticipated physical changes which would result from carrying out planned management practices, at two points in time: at the end of 10 years and at the end of 50 years (RPA planning horizon).

### A. THE FOREST IN 1995 (CHANGES FROM 1985)

At the end of the first decade, there will have been only minimal change in the overall appearance of the Forest. Timber regeneration harvests will have taken place on 66,000 acres at an average annual level of 100 million board feet. Reforestation will be accomplished on 66,070 acres. Timber stand improvement will be applied on 34,000 acres.

Approximately 508 miles may be added to the road system. Miles of major reconstruction will be 170. The new roads are primarily local logging roads that will be permanently or seasonally closed.

Elk potentials on the Forest will be 5,503 animals. Effects on big-game summer range will be minor due to specific management objectives (i.e., road closures) on key areas and the large amount of roadless areas still available.

The current grazing program will have been maintained.

There will be sufficient old-growth timber suitable to meet the needs of old growth dependent wildlife; however, old-growth timber will be reduced below current levels. Old-growth habitat is provided on 20 percent of commercial quality Forest lands below 5,000 feet in elevation.

Habitat to support threatened and endangered species will be enhanced compared to current levels.

Fisheries habitat will be improved from current levels. Fish habitat will have been improved on 710 acres of water.

Recreation will be provided that includes all activities in the Recreation Opportunity Spectrum. Developed recreation will be maintained at current levels. Capacity for dispersed recreation will exceed the projected use for primitive/semiprimitive recreation and roaded natural recreation. Wilderness resources and recreation quality will have been improved through completion of the Limits of Acceptable Change process and the implementation of the monitoring program. Fire will have played a more natural role in wilderness, and diversity will be improved. Approximately 98,100 acres of the 495,400 roadless acres inventoried in 1983 would be proposed for wilderness, with an additional 380,300 acres to remain roadless. Some of the inventoried roadless area is planned for permanent roadless management (about 287,700 acres), while other acreage will eventually be roaded as timber growth matures and the Forest's transportation planning is completed. The total roadless resource will decrease as some of the roadless areas are developed through the timber management program. About 95 percent of the 1983 inventoried roadless acreage will remain in 1995. The trail system will have been maintained at current levels with emphasis on reconstruction of 50 miles of substandard trails.

Mineral development will have increased on the Forest. Physical and biological impacts will have been minimized as both resource managers and mining operators will have become accustomed to working with the mining regulations and lease stipulations.

## B. THE FOREST IN 2035 (CHANGES FROM 1985)

By the end of the fifth decade, many changes will be apparent in the overall condition of the Forest.

Timber will have been harvested on 288,000 acres, and the annual program is predicted to be 152 million board feet. There will have been a drop Forest-wide in the mature age class (from 63 to 57 percent) and an increase in the immature age class (from 37 to 43 percent). This trend will continue into the future and will result in a managed Forest.

Old growth habitat on suitable timberlands will continue to decline as overmature timber is converted to younger, more vigorous stands; however, sufficient old growth habitat will still exist to maintain viable populations of old growth dependent wildlife.

Reforestation will have been accomplished on 288,000 acres with all of the existing nonstocked land reforested. Timber stand improvement will have occurred on 233,000 acres.

As a result of the timber harvest programs, 2,441 miles will have been added to the road system. Miles of major reconstruction will be 850. Approximately 100 percent of the suitable land base will have been accessed and the Forest transportation system will be complete.

Elk winter range will have improved potential to support 7,800 animals.

Habitat to support threatened and endangered species will be maintained or enhanced.

Fisheries habitat will have improved potential to support 406,000 catchable trout. The stream channels will be protected with increased cover.

Forest soil productivity will have been maintained.

The grazing program will remain the same as Decade 1 levels.

No new campsites will be built, but developed recreation capacity will be adequate to meet projected use. Capacity for recreation in a roaded natural setting will be higher and sufficient to meet the projected use. Capacity for recreation in a primitive and semiprimitive setting will not be adequate to meet projected use requiring more controls on visitor use. The remainder of the roadless acres inventoried in 1983, still being managed as roadless, will total about 287,700 acres.

Mineral development will have continued to increase on the Forest.

## FOREST-WIDE STANDARDS

The following standards apply to the National Forest System land that is administered by the Flathead National Forest. They are intended to supplement, not replace, the National and Regional policies, standards, and guidelines found in Forest Service Manuals and Handbooks and the Northern Regional Guide.

Resource management standards are designed to facilitate reaching Forest goals and objectives through attainment of management area goals. On-the-ground application of some standards may vary between Management Areas. Generally these Forest-wide standards will be followed unless the application of these standards will not facilitate reaching management area goals. It is the cumulative total of management area goals that result in attaining Forest goals.

### A. GENERAL STANDARDS

1. If it is determined during project design that the best way to meet the management area goals of the Forest Plan conflicts with a Forest Plan standards, the Forest Supervisor may approve an exception to that standard for that project; such exceptions and the rationale must be described in the project's NEPA documentation.

   There will be no deviation from standards established for threatened and endangered species conservation and protection unless a biologic evaluation concludes that such deviation would have no effect on the recovery of the species, or until there has been consultation with the Fish and Wildlife Service.

2. As soon as practical and subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, and other instruments for occupancy and use of lands of the Flathead National Forest will be made consistent with the Forest Plan.

3. Subsequent activities affecting the Forest, including budget proposals, shall be based on the Forest Plan. Proposed implementation schedules may be changed to reflect differences between proposed annual budgets and appropriated funds. Such scheduled changes shall be considered an amendment to the Forest Plan. They shall not, however, be considered a significant amendment, or require the preparation of an environmental impact statement, unless the changes significantly alter the long-term relationship between levels of multiple use goods and services projected under planned budget proposals as compared to those projected under actual appropriations.

Other Forest-wide standards are organized by resource element.

## B. RECREATION

1. Use the ROS (Recreation Opportunity Spectrum) as a guide to provide the full array of recreation opportunities on the Forest (see Appendix A).*

2. Encourage Forest visitors not desiring a wilderness setting to use nonwilderness National Forest System lands which can provide for their recreation needs.

3. Develop additional cross-country ski trails where increased demand exists. Encourage ski trail development within the private sector.

4. Encourage groomed cross-country ski trails through cooperative agreements with local organized user groups.

5. Continue the Memorandum of Understanding with the State of Montana to provide grooming and maintenance of snowmobile trails.

6. Complete a ROG (Recreation Opportunity Guide) for each Ranger District to make recreation opportunities more visible.

7. Emphasize "low impact" techniques in dispersed recreation areas and continue those established for wildernesses to reduce management costs and resource impacts.

8. All outfitter and guide activities on the Flathead National Forest will be authorized by an outfitter-guide permit as per FSM 2721.53. Utilize the "Outfitter-Guide Application Evaluation Procedure" to respond to new outfitter and guide applications (Appendix B).

9. Prohibit surface occupancy for oil and gas activities within 400 feet of any developed recreation sites. Within one-fourth mile of developed recreation sites, coordinate the timing and location of exploration activities to minimize or avoid conflict with established recreation use at the time the exploration activity is proposed.

10. As per Executive Order 11644, through the Flathead National Forest Travel Planning Direction (Appendix C), and in conformance with the ROS designations for specific areas, designate use restrictions on roads, trails, and specified areas along with designating areas for ORV (Off-road Vehicle) use.

11. Retain the existing capacity of National Forest developed recreation sites on the Flathead National Forest during the next 10 years. The quality of the developed recreation opportunities available will be improved through "full-service" maintenance** or redesign and reconstruction of existing sites to better accommodate present and

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* The ROS Users Guide, a Forest Service Handbook, presents the ROS system as the basic framework for inventorying, planning, and managing the recreation resource. It is incorporated in this Forest Plan as unbound Appendix AA.

** "Full Service" maintenance is specified in Forest Service standards and guidelines on Cleaning Recreation Sites, July 1980, USDA, FS #80231801, pages 6-7.

future needs. Some slight capacity changes may occur as a result of these improvements; however, the changes will provide a better service to the public. No expansion of campground capacity will be permitted if the expansion competes with campgrounds in the private sector.

Big Mountain Ski Area will have significant expansion in the next 10 years.

12. District Rangers will develop annual trail maintenance schedules and maintain trails to an appropriate level according to their maintenance priority classification (see Appendix D), use level, and ROS objectives.

13. System trails located in resource development areas must be included in the project environmental analysis. Any decision to abandon the trail must be clearly documented. To the extent possible, trails should be protected during project activities, and when it is not practical to preserve an existing trail, the trail should be relocated temporarily or permanently (Regional Forester memo to Forest Supervisor, 2353 Development Trails, November 15, 1977).

## C. VISUAL QUALITY

1. In each management area, meet or exceed the recommended VQO (visual quality objective). Where management area goals and objectives can be fully achieved and a higher VQO met without increased costs or reduced future options, the higher VQO should be achieved.

2. Visual resource analysis will normally be part of all project planning in the following areas of the Forest:

   Noisy Face - Swan Lake Ranger District
   East Shore - Swan Lake Ranger District
   Cedar Creek - Glacier View Ranger District
   Lost Rhodes - Tally Lake Ranger District
   Big Mountain - Tally Lake Ranger District
   Holland Lake - Swan Lake Ranger District
   Tally Lake - Tally Lake Ranger District
   Wild and Scenic River Corridors
     (Recreation and Scenic portions)
     North Fork of the Flathead River
     Middle Fork of the Flathead River
     South Fork of the Flathead River
   Swan Lake - Swan Lake Ranger District
   Swan Highway - Swan Lake Ranger District
   Middle Fork - Hungry Horse Ranger District

   See Appendix M for specific project proposals.

3. Through the use of proper design and scheduling of activities, potential impacts on the visual resource will be dispersed and not concentrated within an area or travel corridor within a short time frame.

**Achieving the long-term visual quality goal on the Forest will work in direct proportion to how well the cumulative effects of time and space are addressed.**

**The time and space principles especially need to be applied to the key areas mentioned above. These areas are not viewed as a whole at one time; however, they are viewed sequentially from primary use areas, travel routes, or recreation sites.**

4. **Special concerns due to catastrophic events will be handled on a case-by-case basis.**

## D. WILDERNESS

1. Standards for managing the Bob Marshall and Great Bear Wildernesses (Management Area 21), and also the Mission Mountains Wilderness (Management Area 22), are contained in Chapter III.

2. Recommended additions to the National Wilderness Preservation System are shown on the geographic unit maps in Chapter IV and the Management Area Map. In the event Congress does not classify these areas as wilderness system additions, each is also assigned to a nonwilderness management area. Management standards for these recommended additions will be consistent with the standards of the nonwilderness management area designation, except that no action can occur which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed. Any contiguous lands added to the Bob Marshall Wilderness Complex by Congress will be managed similar to MA 21. Jewel Basin, if added to the National Wilderness Preservation System, shall be managed in accordance with current management area direction until new wilderness management area direction can be developed.

## E. CULTURAL RESOURCES

### 1. INVENTORY

The Forest will continue to undertake cultural resource inventories employing qualified cultural resource specialists, paraprofessionals, volunteers, and consultants. Cultural resource inventories will be conducted on all ground-disturbing projects that are generated, licensed, permitted, or allowed to occur by the Forest Service. Forest inventory efforts will focus on:

a. Areas where specific project activities such as timber sales, road construction, mineral exploration, and development result in significant ground disturbance.

b. Areas where formal cultural resource inventories will provide management data that are broadly applicable to ecologically similar areas which may facilitate the development of predictive models capable of addressing issues of cultural site density, distribution, and significance.

Large-scale inventory projects involving such things as surface mines, oil fields, and pipelines greatly exceed Forest In-Service inventory capabilities. These types of projects will be inventoried by consultants operating under special-use permits. Consultants, universities, or museums conducting privately sponsored, project-specific cultural resource inventories must coordinate all such activities with the appropriate Ranger District and the Forest Archaeologist. Work conducted by personnel outside of the Forest Service will be required to meet all current Federal standards and qualifications. The Forest will ensure the level of performance required through permit administration, field compliance inspections, report review, and the preparation of scope-of-work documents for more complex projects.

The Forest will encourage scientific research by privately funded organizations when the research can be used as a means of acquiring additional inventory and interpretive data.

## 2. EVALUATION

Identified cultural resources will be evaluated in relation to published ACHP (Advisory Council on Historic Preservation) criteria for eligibility to the National Register of Historic Places. Cultural resource sites determined eligible will be nominated to the National Register.

## 3. PROTECTION - PRESERVATION

Known, significant cultural resource sites on the Forest will be protected from inadvertent or intentional damage or destruction. Protective measures may include:

a. Physical on-site measures such as fences or grates.

b. Posting of warning signs about the antiquities law.

c. Protection of site locational information.

d. Law enforcement measures such as patrolling and investigation of antiquities violations.

Site protective measures will be employed only in cases where their implementation will not degrade a significant cultural property and only with approval of the Forest Supervisor.

Significant cultural resource sites will be preserved in place whenever possible. When such resources are threatened by another resource activity or project development, an effort will be made to avoid or minimize adverse impact by redesigning the project. When avoidance of a significant cultural property or site is judged not to be prudent or feasible by the Forest Supervisor, the scientific or historical values of the site will be conserved through proper scientific excavation, recordation, analysis, and reporting.

### 4. ENHANCEMENT AND INTERPRETATION

The Forest will enhance and interpret significant cultural sites for the education and enjoyment of the public when such development will not degrade the cultural property or conflict with other resource considerations. Interpretation and enhancement of significant cultural resources may include, but are not limited to:

a. Scientifically and historically accurate displays, brochures, posters, signs, lectures, and tours.

b. Encouragement of scientific or historical research on the Forest and the distribution of the results to the public. Archaeologists and historians conducting research on the Forest will be encouraged to present lectures, slide shows, or films for the education and enjoyment of the public.

### 5. COORDINATION AND CONSULTATIONS

The Forest will make an effort to coordinate cultural resource issues and concerns with appropriate Native American groups, other Federal and State agencies, the historical and archaeological communities, and the general public.

Some issues of interest to Native American groups concern burials, areas of sacred or religious significance, and the accuracy of portrayals of Native Americans in displays or at interpretive sites. Unmarked historic burials are another area of concern.

In the event that Native American or historic graves are discovered in the course of ground-disturbing activities, the Forest will take the following actions:

a. Evaluation by a Forest Service Archaeologist will be made immediately to determine if the skeletal remains are human and to what time frame or ethnic group they may be related.

b. Reinterment in place and avoidance of further disturbance by project redesign will be considered.

c. In cases where affiliation with an extant Native American group can be reliably ascribed and where reinterment in place is not prudent or feasible, the appropriate Native American entity will be contacted regarding proper reinterment elsewhere.

d. Human skeletal remains which cannot be accurately connected with living Native Americans or a historic group will be scientifically excavated, analyzed, and reported. These remains will be permanently stored at the University of Montana.

The Forest will take into consideration in its multiple-use management process sites which are former or current ceremonial or religious sites. The Forest will continue to consult with local Native American groups with regard to the American Indian Religious Freedom Act.

Portrayals of Native Americans in brochures, displays, or at interpretive sites will be historically and scientifically accurate.

All cultural resource related activities will be conducted in consultation with the Montana State Historic Preservation Office.

## F. WILDLIFE AND FISH*

### 1. INDICATOR SPECIES

"Indicator Species" have been identified for those species groups whose habitat is most likely to be changed by Forest management activities. The tree dependent group indicator species is the marten; the old growth dependent group is represented by the piliated woodpecker; and the riparian tree dependent group indicator species is the barred owl. These species will be monitored to determine population changes resulting from Forest management activities (refer to the Monitoring and Evaluation section of Chapter V). Other indicator species include the threatened or endangered species (grizzly bear, gray wolf, bald eagle and peregrine falcon); commonly hunted species (mule deer, elk, and whitetailed deer); and fish species (bull trout and cutthroat trout). These species are covered under seperate standards below.

### 2. FISH

a. The Flathead National Forest will be managed to maintain and, where feasible, improve fish habitat capacities in order to achieve cooperative goals with the State Department of Fish, Wildlife, and Parks and to comply with State water quality standards.

Sedimentation attributed to land management activities will be controlled so that unacceptable fish losses** do not occur. Fish habitat and riparian management activities will be coordinated in order to provide suitable riparian vegetation to aquatic habitats. An annual program of direct habitat improvement work will be pursued.

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* Includes rare plant species.

** Refer to unbound Appendix EE.

b. The following management standards will be applied to important bull trout habitat on the Flathead National Forest:

1.) Sediment model techniques will be used whenever possible in the important bull trout streams listed below to predict changes in streambed composition due to proposed development.

Cold Creek - Swan Lake Ranger District
Elk Creek - Swan Lake Ranger District
Goat Creek - Swan Lake Ranger District
Jim Creek - Swan Lake Ranger District
Lion Creek - Swan Lake Ranger District
Lost Creek - Swan Lake Ranger District
North Fork Lost Creek - Swan Lake Ranger District
Piper Creek - Swan Lake Ranger District
South Fork Lost Creek - Swan Lake Ranger District
Big Creek - Glacier View Ranger District
Coal Creek - Glacier View Ranger District
Hallowat Creek - Glacier View Ranger District
Mathias Creek - Glacier View Ranger District
Red Meadow Creek - Glacier View Ranger District
Shorty Creek - Glacier View Ranger District
South Fork Coal Creek - Glacier View Ranger District
Trail Creek - Glacier View Ranger District
Whale Creek - Glacier View Ranger District
Bear Creek - Hungry Horse Ranger District
Granite Creek - Hungry Horse Ranger District
Morrison Creek - Hungry Horse Ranger District

2.) Estimated increases in sediment will be held to a level at which spawning and/or rearing habitat remains at 85 percent to 95 percent of its potential at specific sites.

### 3. BIG GAME

Elk summer habitat* will be given appropriate protection and managed in accordance with the following selected recommendations from the Coordinating Elk and Timber Management, Final Report of the Montana Cooperative Elk-Logging Study, 1970-1985, January 1985 (Appendix DD).

Two components of summer elk habitat are identified. These are:

-- "Moist Sites," composed of specific habitat types, topographic situations, and elevations. Some of these have been tentatively mapped in the Flathead National Forest planning data base as summer habitat.

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* Elk summer habitat, as defined above, encompasses about 30,000 acres of tentatively suitable timberland on the Flathead National Forest. Of the 30,000 acres, 6,500 are in riparian areas.

-- "Security Areas," composed of the areas associated with the moist sites that provide security and other necessary components of elk summer habitat.

   a. "Moist Sites" will be managed according to the habitat type - moist site recommendations.

   b. Areas with "Moist Sites" will be managed during the elk use period, with open road densities that average 1 mile or less per square mile.

   c. "Security Areas" will be managed according to the security area recommendations.

   d. In both "Moist Sites" and "Security Areas," slash in managed stands will be reduced to levels that do not impede elk movement.

## 4. NONGAME WILDLIFE

a. Generally retain 10 to 15 tons per acre of down woody material as habitat for small mammals and ground nesting birds unless otherwise specified in management area direction.

b. Maintain old-growth habitat and snags at elevations below 5,000 feet at the number and distribution that will achieve the desired potential populations of old growth and snag cavity dependent species. Desired snag requirements are specified for each management area. The species designated for old growth and snag management in descending order of preference are: western larch, aspen, paper birch, black cottonwood, ponderosa pine, Douglas-fir, Engelmann spruce, subalpine fir, and other species.

## 5. THREATENED AND ENDANGERED SPECIES - BALD EAGLE AND PEREGRINE FALCON

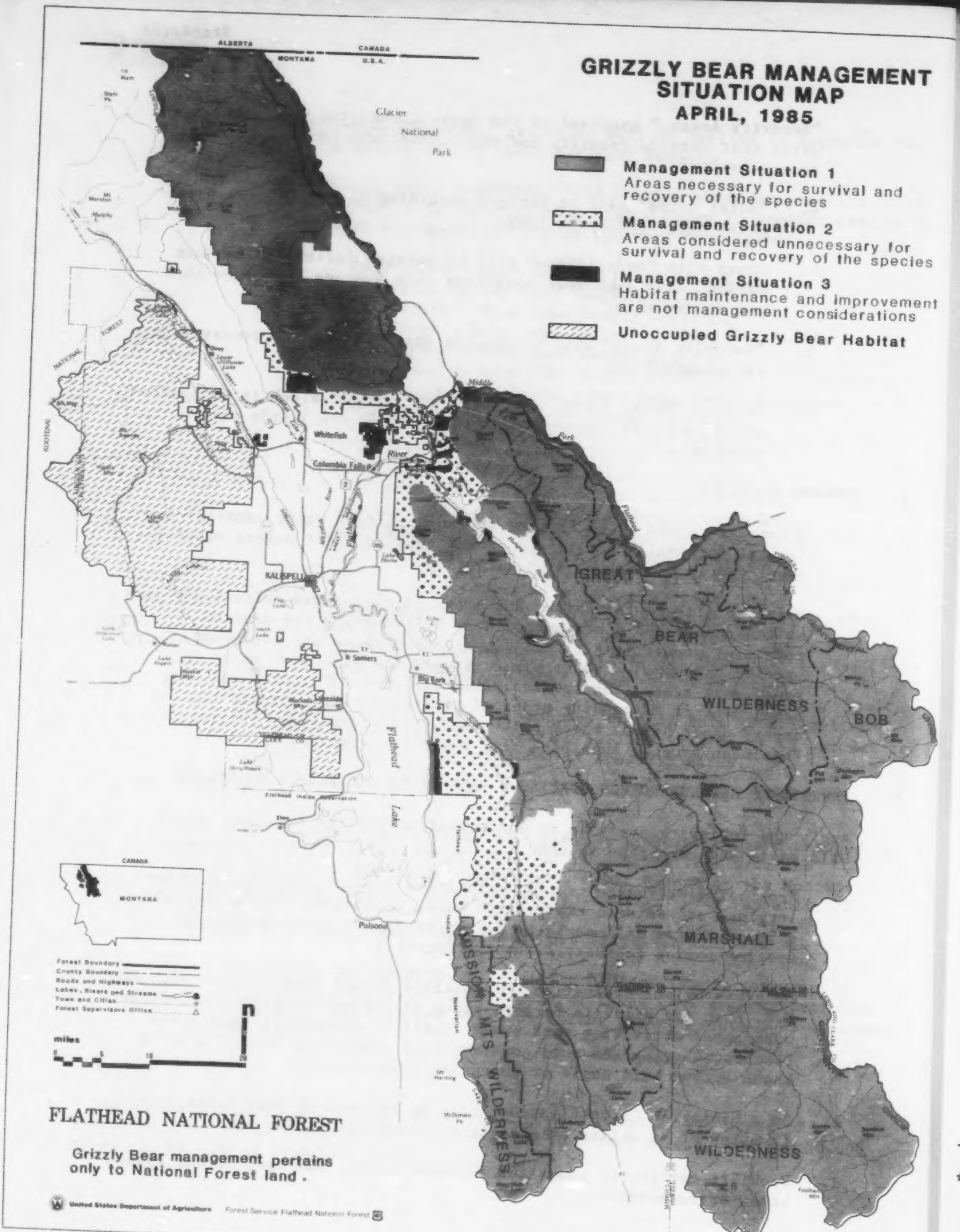
Apply the following guidance to management activities that may affect bald eagle and peregrine falcon.

a. Prohibit disturbance-causing activities such as road construction, logging, and seismic exploration using explosives within one-half mile of active bald eagle or peregrine falcon nests during the nesting period February 1 through August 1.

b. Do a biological evaluation and initiate formal consultation with the U.S. Fish and Wildlife Service prior to implementing National Forest management activities that would result in changes in vegetation (such as logging and road construction) within one-fourth mile of known active bald eagle or peregrine falcon nests.

c. Do a biological investigation prior to the use of pesticides within 15 miles of an active bald eagle or peregrine falcon nest.

d. Prohibit cutting of snags for firewood within 300 feet of any river, lake, or reservoir.



## GRIZZLY BEAR MANAGEMENT SITUATION MAP
## APRIL, 1985

▨ **Management Situation 1**
Areas necessary for survival and recovery of the species
▨ **Management Situation 2**
Areas considered unnecessary for survival and recovery of the species
■ **Management Situation 3**
Habitat maintenance and improvement are not management considerations
▨ **Unoccupied Grizzly Bear Habitat**
ALBERTA
MONTANA
CANADA
U.S.A.
Glacier National Park
Whitefish
Columbia Falls
River
Middle
Fork
Flathead
KALISPELL
Somers
Big Fork
Flathead
Lake
Flathead Indian Reservation
Elmo
Polson
GREAT BEAR WILDERNESS
BOB MARSHALL WILDERNESS
MISSION MTS WILDERNESS
KOOTENAI NATIONAL FOREST
CANADA
MONTANA
Forest Boundary
County Boundary
Roads and Highways
Lakes, Rivers and Streams
Town and Cities
Forest Supervisors Office
miles
0
5
10
20
N

**FLATHEAD NATIONAL FOREST**

**Grizzly Bear management pertains only to National Forest land.**

United States Department of Agriculture     Forest Service Flathead National Forest

## 6. THREATENED AND ENDANGERED SPECIES - GRIZZLY BEAR ("Grizzly Bear Guidelines")

### a. Introduction

This section provides direction for grizzly bear management on the Flathead National Forest. It incorporates guidelines specific to the Flathead National Forest, and is intended to provide the manager with management direction for coordinating Forest activities to achieve recovery of the grizzly bear. The Forest will abide by any future revisions to these guidelines by the Interagency Grizzly Bear Committee.

The grizzly bear was identified as a "threatened" species in 1975 under provisions of the Endangered Species Act. As such, the species and its habitat receive a special protective status in all Federal programs and activities. There are two major grizzly bear population centers and four other areas containing self-perpetuating or remnant populations in the lower 48 States. The two major areas are known as the Yellowstone Ecosystem population and the Northern Continental Divide Ecosystem population in northwestern Montana. These two ecosystems appear to provide the best potential for survival and recovery of this species in the lower 48 States.

Although the Northern Continental Divide population may not have been studied as intensively as the Yellowstone, a considerable body of research is available to direct management. Data is available from Glacier National Park (Martinka), Border Grizzly Project (Jonkel), and the East Front Studies (Aune). Adaptable research from the Yellowstone Ecosystem also furnishes considerable information valuable for management.

There are 5,671,864 acres of occupied grizzly bear habitat in the Northern Continental Divide Ecosystem with varied population estimates of 440 to 680* bears. Eighteen percent of the occupied habitat is within Glacier National Park and 59 percent is National Forest, occurring on five administrative units: Flathead, Lewis & Clark, Lolo, Helena, and Kootenai National Forests. The occupied habitat is found in the State of Montana and is contiguous with habitat in Canada. The remainder of the habitat is on other public and private lands.

In this direction, habitat for the grizzly is divided into three Management Situation categories based on grizzly habitat value and population distribution. If changes in grizzly population and distribution occur, restratification of these categories may become necessary. Habitat suitability, combined with consistent grizzly observations and analysis of habitat components, would be the basis for restratification.

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rizzly Bear Recovery Plan.

b. **Management Situations**

(1) **Management Situation 1**

(a) **Population and Habitat Conditions** - The area contains grizzly population centers (areas key to the survival and recovery of grizzlies where seasonal or yearlong grizzly activity, under natural, free-ranging conditions is common*) and habitat components needed for the survival and recovery of the species or a segment of its population. The probability is very great that major Federal activities or programs may affect (have direct or indirect relationships to the conservation and recovery of) the grizzly.

(b) **Management Direction** - Grizzly habitat maintenance and improvement (improvement applies to Forest Service only), and grizzly-human conflict minimization will receive high management priority (FSM 2603). Management decisions will favor the needs of the grizzly bear when grizzly habitat and other land-use values compete. Land uses which can affect grizzlies and/or their habitat will be made compatible with grizzly needs, or such uses will be disallowed or eliminated. Grizzly-human conflicts will be resolved in favor of grizzlies unless the bear involved is determined to be a nuisance*. Nuisance bears may be controlled through either relocation or removal but only if such control would result in a more natural free-ranging grizzly population and all reasonable measures have been taken to protect the bear and/or its habitat (including area closures and/or activity curtailments).

(2) **Management Situation 2**

(a) **Population and Habitat Conditions** - The area lacks distinct grizzly population centers; highly suitable habitat does not generally occur, although some grizzly habitat components exist and grizzlies may be present occasionally. By definition, Management Situation 2 areas are those considered unnecessary for survival and recovery, although the status of such areas is subject to review and change according to demonstrated grizzly population and habitat needs. The effects of major Federal activities or programs on the conservation and recovery of the species are not generally predictable.

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* Guidelines for Management involving Grizzly Bears in the Greater Yellowstone Area, December 1979.

(b) **Management Direction** - The grizzly bear is an important but not the primary use on the area. Habitat maintenance and improvement and grizzly-human conflict minimization may be, in some cases, important but not the most important management considerations. Demonstrated grizzly populations and/or grizzly habitat use will be accommodated in other land use activities if feasible, but not to the extent of exclusion of other use needs. A feasible accommodation is one which is compatible with (does not make unobtainable) the major goals and/or objectives of other uses. When grizzly population and/or grizzly habitat use and other land use needs are mutually exclusive, the other land use needs may prevail in management considerations. If grizzly population and/or habitat use represents demonstrated needs that are so great (necessary to the normal needs or survival of the species or a segment of its population) that they should prevail in management considerations, then the area should be reclassified under Management Situation 1. Nuisance grizzlies will be controlled.

(3) **Management Situation 3**

(a) **Population and Habitat Conditions** - Grizzly presence is possible but infrequent. Developments, such as campgrounds, resorts or other high human use associated facilities, and human presence result in conditions which make grizzly presence untenable for humans and/or grizzlies. There is a high probability that major Federal activities or programs may affect the species' conservation and recovery.

(b) **Management Direction** - Grizzly habitat maintenance and improvement are not management considerations. Grizzly-human conflict minimization is a high priority management consideration. Grizzly bear presence and factors contributing to their presence will be actively discouraged. Any grizzly involved in a grizzly-human conflict will be controlled. Any grizzly frequenting an area will be controlled.

### c. Flathead National Forest Grizzly Bear Situation

Current Occupied Habitat, 2,055,648 Acres

| Administrative Unit | Mgmt. Sit. 1 | Mgmt. Sit. 2 | Mgmt. Sit. 3 | Total |
|---|---|---|---|---|
| NF Acres | 1,923,168 | 111,360 | 21,120 | 2,055,648 |
| Percent of Occupied Habitat | 94% | 5% | 1% | 100% |

The grizzly is a highly mobile animal. It is imperative to understand that although the grizzly's habitat has been stratified by management units, the ecosystem must continue to function as a whole; i.e., although areas are mapped as Situation 2, many bears will need to be on these areas during the spring as part of their total home range.

The precise carrying capacity of the Flathead National Forest's part of the Northern Continental Divide Ecosystem to support grizzly bears is not known at this time. The highest known densities in the continental United States occur in the Northern Continental Divide population. The Flathead National Forest must provide habitat capable of sustaining one bear per 15.5 square miles of occupied habitat to provide its contribution of 207 bears toward a recovered population.

### d. Grizzly Bear Recovery Objectives

The Flathead National Forest's objectives for meeting the Northern Continental Divide Ecosystem's recovery goal are as follows:

(1) Achieve the recovery goal for the Northern Continental Divide Ecosystem.

(2) Manage all "Situation 1" areas with the grizzly bear as a primary resource which must be maintained or enhanced.

(3) Manage "Situations 2 and 3" areas in a manner that multiple-use activities will be compatible with the conservation and recovery of the grizzly.

### e. Management Direction

#### All Management Functions, All Management Situations

(1) Maintain close contact with research organizations to ensure that current research data are being used in resource planning and administration affecting grizzlies.

At least once a year, District Rangers and biologists will meet to review current research findings and discuss their application in resource management. Review and revise guidelines as necessary to keep them current. Address research needs in terms of Forest management activities.

(2) Biological evaluations of all significant projects are required. Projects or land uses may proceed if a "No Effect" determination is made. If a "May Adversely Effect" determination results, the proposed project or land use will be modified for compatibility, eliminated, or appropriate consultation procedures with the U.S. Fish and Wildlife Service initiated.

(3) Identify and evaluate for each project proposal the cumulative effects of all activities, both existing uses and other planned projects, relative to both public and private lands.

(4) Measures to be taken to protect, maintain, and/or improve grizzly bear habitat and populations as a result of the biological evaluation will be specified in project design.

(5) Refine management situation stratification based on current grizzly habitat suitability, population, and distribution trends. All biological evaluations will assess the current status of management situation stratifications for accuracy and provide analysis data and recommendations for updating as necessary.

(6) Establish an active public information and education program discussing grizzly bear management, stressing goals, objectives, and steps required to recover the population.

(7) Carcasses of wildlife, livestock, or other attractants along highways, roads, and trails will be removed a distance of one-fourth mile from the travelway or otherwise made unavailable to bears. Removal should occur within 24 hours.

(8) The riparian zone is a basic component of suitable grizzly habitat. Its management will maintain grizzly bear habitat and will generally follow established guidelines within the Forest Plan.

(9) Active grizzly bear trapping sites that are not tended will be closed to other human use. Warning signs will be posted prior to installation of the trap.

(10) Contracts and permits will include a clause providing for the cancellation, suspension, or temporary cessation of activities if such is needed to resolve a grizzly/human conflict situation. Permits for temporary onsite facilities will require that camps be located to avoid seasonally important bear habitats and contain the grizzly bear clauses developed to prevent people/bear conflict. Contractor and permittees' cooperation in meeting grizzly management goals will be attained with applicable clauses and stipulations.

(11) Operating plans and special-use permits involving concerns over human or domestic stock food storage, handling, and garbage disposal will have appropriate clauses applied.

(12) Road management will be conducted to assist in meeting grizzly bear habitat management goals. When warranted, roads will be closed seasonally or yearlong, and where appropriate, area closures will be applied. Transportation plans and Forest visitor plans as well as individual project road systems will be evaluated regarding their impacts on habitat effectiveness.

(13) Feeding of bears will be prohibited.

(14) Areas with a history of grizzly/human encounters or areas with documented increased use by bears may be closed to human use temporarily, seasonally, or yearlong, in Situations 1 and 2.

(15) No open garbage dumps will be permitted. The Forest will work toward bear proofing all garbage handling facilities.

(16) Within Management Situations 1 and 2, provide security areas immediately adjacent to the influence zone of the project area. Decide on a site-by-site basis. Security areas should be 5,000 acres or larger in areas that are roadless or where the open road density averages 1 mile/square mile or less over the area during the bear use period.

(17) All land adjustment cases will be evaluated using the biological evaluation process for determining effects on the grizzly bear.

### f. Guidelines

To assist land managers in meeting established goals for the grizzly bear, the following guidelines have been developed. These guidelines provide for more detailed application of the broad "Grizzly Bear Guidelines," for maintaining and improving habitat and in minimizing grizzly/human conflict potential.

It is recognized that in several areas of the Forest, such as the Swan Valley, important seasonal habitats occur that are dependent on private as well as National Forest System land. The inability of the Forest to exercise exclusive control of activities and programs that may affect the grizzly determined the Management Situation delineation. Activities and programs on Forest land will be evaluated in relation to the importance of the area to the grizzly bear.

The guidelines and the Flathead National Forest annual monitoring plan will be reviewed with the U.S. Fish and Wildlife Service and the Montana Department of Fish, Wildlife, and Parks. The annual monitoring plan will provide rationale for stated levels of implementation.

To comply with Section 7 of the Endangered Species Act, biological evaluations consistent with these guidelines will be completed prior to projects being authorized or funded. The biological evaluation will determine the potential for the proposed action to adversely affect Federally listed species and provide recommended mitigation measures.

### Timber Management, Management Situations 1 and 2

(1) Timber sale project plans will include grizzly bear habitat improvement if there is a determined need to improve grizzly bear habitat in the project area or develop habitat improvement techniques, provided the timber sale and/or wildlife funds are available to accomplish the improvements.

(2) Coordinate timber sale activities in time and space so that activities occur at a time when the area has the least biological importance to the bear. Strive to concentrate activities within the shortest time period.

(3) Where feasible, even-aged harvest units should be irregular in shape. Generally these units will be limited to topography with slopes less than 35 percent where tractor yarding will be permitted. Seldom will irregular-shaped units be created on steep slopes where cable yarding and broadcast burning is the only alternative. No point within the unit can be more than 600 feet from cover.

(4) When harvest units are located adjacent to natural or manmade openings, hiding cover will be maintained on approximately 75 percent of the opening's perimeter. Minimum width of hiding cover is 3 sight distances; therefore, the minimum width of leave strips should be at least 3 sight distances.

(5) Clearcutting of stands should not occur until adjacent harvested units qualify as summer hiding cover. Sales should be planned so that repeated entries over short periods are avoided.

(6) Maintain a minimum of 40 percent cover of each project analysis area with 20 percent in summer hiding cover and 20 percent in summer thermal cover distributed throughout the area.

Long-term management of grizzly bear habitat in project analysis areas will strive for even distribution of the following successional stages (wildernesses and roadless areas excepted):

Old Growth*
Mature
Immature
Pole
Shrub/Sapling
Grass/Forb/Seedling

(7) Timber sale receipts, collected for post-sale area improvement (Knudson-Vandenberg Act funds) may be used, if available, to enhance the grizzly habitat within a sale area.

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* Old growth will be provided within the riparian area on a Forest-wide basis.

(8) Consider habitat management schemes to reestablish and maintain whitebark pine as a component of suitable habitat. Additional research is needed.

Fire Management, All Management Situations

(1) Grizzlies derive much of their energy from the fruits of shrubs, including huckleberry and buffaloberry. Burns resulting from wildfires in this century are important producers of fruiting shrubs which provide grizzly food energy. Natural fire frequency appears necessary to maintain or expand burn components. Prescribed burning in habitat types which are not managed for timber production will be implemented through natural and planned ignition to approximate a natural fire frequency. Forest components known to have the greatest potential for improvement will receive priority. Additional research is needed.

(2) On all project fires the resource coordinator will evaluate ongoing and potential impacts on the grizzly.

Range Management, Management Situations 1 and 2

(1) All livestock use on allotments, including recreation horse allotments, will be evaluated by the biological evaluation process for its effect upon grizzlies and/or their habitat. Evaluation will follow the direction established for preparation and revision of allotment management.

(2) Grazing activities with potential for affecting the grizzly bear, as determined in the biological review, will be modified so as not to adversely affect the grizzly bear and its habitat.

(3) Allotment management direction will specify, when applicable, measures to protect in time and space food production areas vitally important to grizzlies (i.e., wet alpine and subalpine meadows, stream bottoms, aspen groves, and other riparian areas) from conflicting and competing use by livestock.

(4) Livestock grazing on important spring habitat for grizzlies should be deferred until after July 1.

Recreation Management, All Management Situations

(1) Outfitter/guide permits will specify measures to be taken in terms of food storage, refuse disposal, and wild meat storage. Work with Montana Department of Fish, Wildlife, and Parks on enforcement of the permit regulations.

(2) An information brochure summarizing human conduct in grizzly country will be made available to the public. A supply of the brochure will be made available to local offices of the Montana Department of Fish, Wildlife, and Parks.

(3) In Situations 1 and 2, when recreational use is determined to exceed grizzly tolerance levels as determined through biological analysis, some means of restriction or reduction of human use should be implemented.

(4) Reduce grizzly mortality illegally occurring during big-game hunting seasons by:

   (a) Assisting Montana Department of Fish, Wildlife, and Parks in making information available to all hunters to assist them in distinguishing between black and grizzly bear.

   (b) Assisting Montana Department of Fish, Wildlife, and Parks in issuing special warnings to hunters using areas frequented by grizzly bear.

   (c) Road closures in key grizzly bear habitat.

## Minerals and Special Uses, All Management Situations

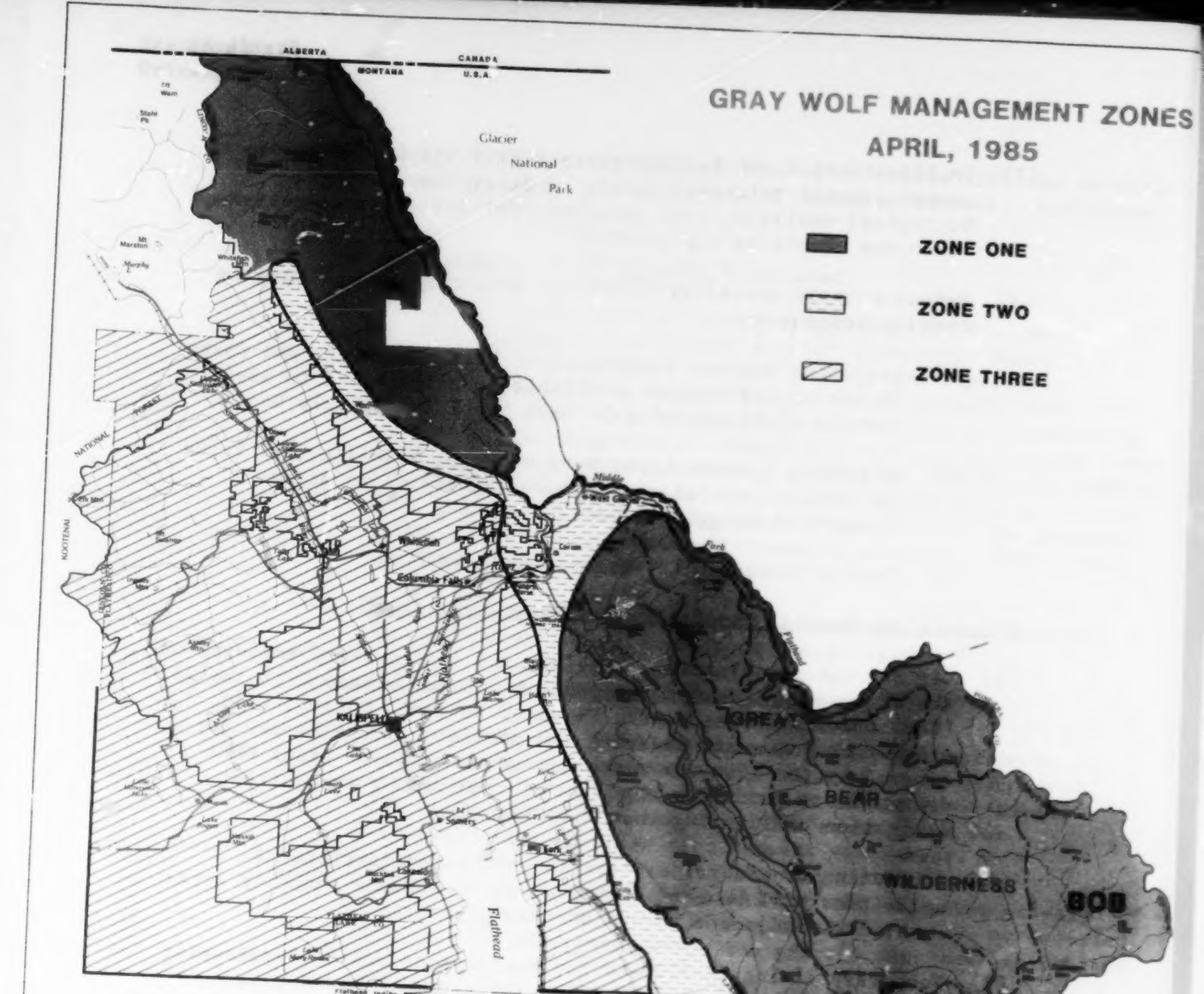
(1) All oil and gas planning, leasing, and implementing activity on the Flathead National Forest will be in accordance with the EA (Environmental Assessment), Flathead National Forest, 1980, other NEPA documents covering the portions of the Forest not covered by the 1980 environmental assessment, or other NEPA documents or processes that may be required by the current litigation challenging that 1980 EA.

(2) Scheduling of mineral exploration and other development activities will be established so as to provide security areas immediately adjacent to project analysis areas.

(3) Temporary living facilities for exploration and/or development personnel may be onsite but with restrictions as necessary. Offsite camps will be encouraged. Approved camps will include restrictions on food storage, garbage disposal, firearms, and domestic pets.

(4) Avoid superimposing activities on seasonally important grizzly bear habitats which may adversely affect the species or reduce habitat effectiveness.

(5) Establish flight patterns (corridors) in advance when activities require the use of helicopters. Flight patterns should be located to avoid seasonally important grizzly bear habitat constituent elements and habitat components during bear-use periods. In some instances altitudinal restrictions could safequard bears as well as flight corridors.



# GRAY WOLF MANAGEMENT ZONES
## APRIL, 1985

▆ ZONE ONE

☐ ZONE TWO

▨ ZONE THREE

ALBERTA
CANADA
MONTANA
U.S.A.
Glacier National Park
NATIONAL FOREST
KOOTENAI
Whitefish
Columbia Falls
KALISPELL
Flathead
Somers
Bigfork
Flathead Lake
Flathead Indian Reservation
Polson
Middle Fork Flathead
GREAT BEAR WILDERNESS
BOB MARSHALL WILDERNESS
MISSION MTS WILDERNESS
MONTANA
Forest Boundary
County Boundary
Roads and Highways
Lakes, Rivers and Streams
Town and Cities
Forest Supervisors Office
Miles

FLATHEAD NATIONAL FOREST

**Gray Wolf management pertains only to National Forest land.**

United States Department of Agriculture   Forest Service Flathead National Forest

## 7. THREATENED AND ENDANGERED SPECIES - GRAY WOLF ("Gray Wolf Guidelines")

### a. Introduction

These guidelines provide management direction for the gray wolf on the Flathead National Forest. Most of these guidelines were developed from the Draft Northern Rocky Mountain Wolf Recovery Plan. Additional guidelines may be developed and incorporated as more data is developed on multiple-use and gray wolf management. The Forest will abide by any future revisions to these guidelines necessary upon completion of the Gray Wolf Recovery Plan by the Fish and Wildlife Service.

### b. Status

The Northern Rocky Mountain Wolf (Canis lupus irremotus), or Gray Wolf, was listed as "Endangered" by the Secretary of the Interior in 1973 (38 Federal Register 14678, June 4, 1973) and with 1978 provisions of the Endangered Species Act of 1964. "Endangered" means that a species is in danger of extinction throughout all or a significant portion of its range. This act places obligations on Federal agencies and projects under Federal license or sponsorship to protect endangered species and their habitats.

### c. Recent Findings and Current Distribution

Evidence compiled by the University of Montana Wolf Ecology Project indicates wolves are expanding their range southward from Canada into northwestern Montana. Immigration from northern ranges may account for increased activity being reported in the North and Middle Forks of the Flathead River drainage and along the Rocky Mountain Front south of the U.S.-Canadian border. Information on Gray Wolf in and around Glacier National Park (Singer 1975) is available and continues to be developed through the Wolf Ecology Project (Ream, et al., 1984). Studies in Jasper National Park of Canada (Carbyn 1974) and information compiled for the Yellowstone area (Weaver 1978) also furnish information useful for wolf management in the Flathead locale.

### d. Wolf Management Considerations

(1) Wolf habitat has two primary components or attributes: (1) available prey, primarily ungulates (deer, elk, moose), and (2) security from disturbances. Vegetation, elevation, geology, climate, and other physical factors are immaterial as long as wolves have food and security.

(2) Wolves are social carnivores by nature and usually live in packs. As social carnivores at the top of the ecological pyramid, wolves need comparatively large spaces in which to find enough available prey and security.

(3) Stream and river bottoms appear to be used as important travel routes and gathering places in their daily and seasonal activities and for locating beaver, an important spring and summer food source. Roads may also serve as easy travel routes, especially when human access is limited.

(4) Ungulate winter/spring ranges, both traditional and transitional, are important areas for wolves in securing prey. Because wolves depend heavily on ungulates, increasing ungulate populations may improve the situation for wolf recovery. Protecting and improving beaver habitat may also improve the chances for wolf recovery.

(5) Reduction of human access can reduce wolf/people encounters and, thereby, reduce human-caused wolf mortalities.

### e. Recovery Area and Management Zones

The proposed Northwestern Montana Wolf Recovery Area includes Glacier National Park, designated wildernesses (Bob Marshall, Great Bear, Lincoln-Scapegoat), and adjacent public lands. It generally coincides with the Northern Continental Divide Grizzly Bear Ecosystem. A major portion of Flathead National Forest lies within the proposed wolf recovery area.

(1) **Management Zone 1** - This zone contains key habitat components in sufficient abundance and distribution on an annual basis to sustain a viable wolf population(s). Generally it is an area greater than 3,000 contiguous square miles with less than 10 percent private ownership (excepting railroad grants) and less than 20 percent subject to livestock grazing.

(2) **Management Zone 2** - This zone is established as a buffer between Zone 1 and Zone 3. It may serve as a travel corridor for colonizing animals and should contain some key habitat components (particularly ungulate winter ranges), but probably not in sufficient abundance and distribution to sustain a viable wolf population yearlong. Close association with people is a concern. These areas may be necessary for survival and recovery of the species through contribution of key habitat components during certain periods of time.

(3) **Management Zone 3** - This zone contains established human activities and developments in sufficient degree to render wolf presence undesirable.

(4) **Management Zone Guidelines**

(a) **Zone 1** - Wolf habitat maintenance and improvement and wolf-human conflict minimization will be a primary management objective. Management decisions will favor the needs of the wolf when wolf habitat and other land uses compete. Land uses should be planned and managed to enhance recovery of the wolf. Wolves determined to be a problem* may be selectively controlled under direction that will be provided in the Wolf Recovery Plan.

(b) **Zone 2** - The wolf is still an important consideration in this zone, and management will be provided to at least maintain the habitat conditions that resulted in the area being classified as Zone 2. Wolf activity or needs will be accommodated if feasible, but not to the extent of excluding other high-priority land uses. A feasible accommodation is one which is compatible with (does not make unobtainable) the major goals and/or objectives of other uses. Wolves determined to be a problem may be selectively controlled under direction provided in the Wolf Recovery Plan.

(c) **Zone 3** - Maintenance and improvement of habitat solely for wolves, and minimization of wolf-human conflict potential are not management considerations. Wolf/human/livestock conflicts will be resolved by control under direction that will be provided in the Wolf Recovery Plan.

f. **Wolf Habitat Management Direction**

(1) Biological evaluations shall be prepared on all significant projects and activities which have a probability of affecting wolves and their habitat. Projects, activities, or land uses may proceed if a "No Effect" determination is made. If a "May Adversely Effect" determination results, the project, activity, or land use will be either modified for compatibility, eliminated, terminated, or appropriate consultation procedures with the U.S. Fish and Wildlife Service will be initiated.

Projects, activities, and land uses will be monitored for compliance with the biological evaluation constraints and recommendations.

(2) Measures to be taken to protect, maintain, and/or improve wolf habitat and populations as per the biological evaluation will be specified in project design.

(3) Identify and evaluate cummulative effects of all activities for each project proposal, including recent, current, and planned.

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* There are 20,000 acres of private land along the flood plain of the North Fork Flathead River. This area is critical to the recovery of the wolf; however, it is important that the rights of private landowners are maintained as wolves are allowed to recover.

(4) Maintain active communications with research organizations to ensure current research data are being used in resource planning and administration affecting wolves and their habitat. As necessary, District Rangers and biologists shall meet to review current research findings and discuss their application in resource management. Review and revise guidelines periodically to keep them current. Address research needs in terms of Forest management activities. Monitor the application of guidelines to assure they are properly and effectively used.

(5) Refine management situation stratification based on current habitat suitability, population, and distribution trends. All biological evaluations will assess the current status of management situation stratifications for accuracy and provide analysis data and recommendations for updating as necessary.

(6) Establish an active public information and education program addressing wolf management and stressing goals, objectives, and actions required to recover the populations. Provide educational facts on wolf ecology, legal status, present population levels, and disturbance factors to Forest users through a strong I & E effort. Emphasize protective measures for allowing wolf populations to become viable. Emphasize the availability and efficiency of methods for controlling wolves where necessary.

(7) Logging activities should not be conducted in or near the following areas at certain times of the year: (a) within one mile radius of known or highly suspected wolf whelping dens and initial rendezvous sites 15 March - 1 July; (b) ungulate calving/fawning areas 1 May - 15 July; and (c) crucial ungulate winter ranges 1 December - 15 April. The dates and locations given may vary and should be based on the current ongoing wolf research.

## 8. WOODLAND CARIBOU

Cooperate with the State of Montana and U.S. Fish and Wildlife Service in further identification of the status of woodland caribou. If caribou populations are ascertained, the Forest will consider Plan amendment to assist in recovery.

## 9. RARE PLANTS

Work with the State and private organizations in the inventory of threatened, endangered, or sensitive plants. Develop conservation management direction for all such plants and plant communities located. Plant species of possible concern include:

Botrychium paradoxeem - Peculiar moonwort
Botrychium montanum - Mountain moonwort
Howellia aquatilis - Howellia
Grindelia Howellia - Howell's gumweed

## G. RANGE

1. Consider the management area objectives and dependency of the ranching community in forage management.

2. Control livestock grazing on timber cutting units as necessary to provide for tree regeneration. Livestock grazing on lands designated for timber production may be permitted under the following conditions: (1) regeneration is established, or (2) the silvicultural prescription and allotment management are specifically designed to meet regeneration goals.

3. Control livestock grazing in riparian areas to maintain water quality and fisheries habitat.

4. Management of domestic livestock grazing allotments will be consistent with management area direction.

5. Develop management direction for noxious weeds.

## H. TIMBER

1. Require silvicultural examination and prescriptions before any vegetative manipulation takes place. Exceptions include right-of-way clearing and maintenance, hazard tree removals, mineral and other special-use developments, and free-use salvage or other permits.

2. Timber sales will be designed to consider cost effectiveness while maintaining the long-term sustained yield and protecting the soil and water resources.

3. Where compatible with management area direction, enhance firewood removal opportunities by implementing the following:

    a. If soil and water concerns can be satisfied, temporary roads on commercial timber sales which access firewood should be kept open for a period of time not exceeding 1 year after sale termination.*

    b. Provide for slash disposal and site preparation that gives the public a reasonable opportunity to utilize logging residue as firewood. Where appropriate, require the timber purchaser to yard firewood material to roads or landings so that it is available to woodcutters.

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*Sufficient amounts of firewood are those volumes in excess of that needed for management area objectives (average 15 tons per acre), and which are readily accessible from the temporary road. These excess volumes would also supply a reasonable amount of material to the wood gatherer. Generally, if sufficient down material is left to cover the regeneration requirements, nutrient recycling needs are also taken care of.

c. Develop a program of commercial firewood sales at a level which considers current needs and which can be maintained as part of the Forest regular sell program.

d. Develop an information program to explain the firewood permit system. Emphasis should be directed to other uses of firewood material, such as wildlife and silviculture, as well as safety, responsibilities of woodcutters, commercial forest users, and the limits of noncommercial use.

e. Continue emphasizing commercial utilization of non-sawlog material on commercial timber sales through available contractual provisions.

3. The Northern Regional Guide specifies utilization standards that will serve as the Flathead National Forest's minimum utilization standards.

4. The Forest-wide analysis of the potential for mountain pine beetle related mortality will be updated by October 1, 1986. The decision to harvest, or defer from harvest, existing or expected mortality caused by the mountain pine beetle during this 10-year planning period will be supported by analysis of the effects, both adverse and beneficial, from a total resource standpoint including economics.

5. Vegetation management will be guided by the Vegetation Management Practices and Habitat Type Guidelines (Appendix I), and the Northern Regional Guide.

## I. WATER

The following standards are designed to protect or improve the quality of the water resource. These practices, known as **BMP's (Best Management Practices)**, utilize the best technology available. These practices are a result of laws, regulations, and good land stewardship.

The group of practices was compiled from The Flathead Drainage 208 Project, May 1980; Flathead National Forest Hydrologic Guidelines, 1981; and other sources. Additional BMP's are listed with the descriptions of individual management areas and in Appendix Q (Landtype Guidelines). Limits listed in the State water quality standards are coordinated with BMP's.*

The Forest BMP's emphasize, but are not limited to, preventing or minimizing erosion and sedimentation: soil should be kept in its original location and water should be prevented from accumulating to cause erosion or carry large volumes of sediment to streams.

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* Certain constituents of water may not be altered more than a specified amount from "naturally occurring." "Naturally occurring," according to the Montana Department of Health and Environmental Sciences means "conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water conservation practices have been applied." Reasonable land, soil, and water conservation practices are BMP's.

The Forest has designated riparian management areas (Management Areas 12 and 17) and nontimber producing areas where riparian ecosystems are protected. Riparian areas (or vegetative buffer strips) are summarized in Table II-4, and addressed in the Forest BMP's.

TABLE II-4 - Riparian Area Acreage Summary - Flathead National Forest

| Management Areas | |
|---|---|
| Non-timber producing management areas (W&SR, Wilderness, etc.) | 32,500 acres |
| Non-productive areas of riparian management (not capable of timber production) | 5,100 acres |
| Riparian wildlife management areas capable of producing timber but not scheduled | 38,831 acres |
| Riparian mangement area that includes productive timberland using 200-year rotation scheduled timber harvest | 12,580 acres |
| Total Riparian Area on Forest (lakes, ponds, perennial streams - exclusive of meandered water) | 89,011 acres |

Outlined below are the BMP's for the Flathead National Forest. These practices are currently in effect but are stated here for clarification and public reference. These Best Management Practices will be applied to project activities to ensure meeting or exceeding State water quality standards.

1. **GENERAL**

   a. A watershed cumulative effects feasibility analysis for projects involving significant vegetation removal is required prior to project implementation. This is to ensure that the project, considered with other activities, will not increase water yields or sediment beyond acceptable limits. Such analysis should identify opportunities, if any exist, for mitigating adverse effects on water related beneficial uses.

   b. In flood plains or wetlands, as defined by Executive Orders 11988 and 11990, any activity (including roadbuilding or timber harvest) must adhere to the requirements of these two Orders.

      -- The intent of EO11988 is to reduce the risk of flood loss, to minimize negative impacts of floods on human activities, and to "preserve natural and beneficial values served by floodplains."

      -- The intent of EO11990 is to minimize damage to or loss of wetlands and "...preserve and enhance the natural and beneficial values of wetlands..."

## 2. ROAD DESIGN AND BUILDING

All roads should be designed to keep sediment production and negative impacts to water quality to a minimum.

a. A transportation document based on an interdisciplinary approach, which considers present and future uses, will be made in order to build only the roads necessary.

b. Roads will be designed so that maintenance needs are minimal.

c. Sensitive soils (soils on steep slopes, erodible soils, poorly drained soils) or mass failures (potential slump and slide areas) need to be identified and avoided or the appropriate mitigating measures applied.

d. Large road cuts and fills will be minimized in number and size or appropriate mitigating measures will be applied.

e. On very steep slopes in close proximity to streams and where the land is sensitive to erosion, road spoil will not be side cast without special mitigating measures. See Sediment Caution Zones, Fig. II-1.

f. Long, sustained road grades will be protected by erosion barriers such as rolled grades, drive-through water bars, outsloped road sections, or other measures that prevent water from eroding the road prism.

g. Any temporary or permanent road exceeding 8 percent grade will require extra consideration which may necessitate special design and mitigating measures.

h. Roads on flood plains will be built in accordance with the guidance for Sediment Caution Zones, Fig. II-1 Crossings of this flood plain will be kept to a minimum number.

i. Roads should not be built on disected landforms such as landtype 74 because of its high sediment delivery to streams (See Appendix Q).

j. The protective vegetative cover along each side of streams will be maintained as buffer strips. These strips will be wide enough to prevent most sediment from reaching streams.

k. Machinery will not be operated in vegetative buffer strips except as necessary to install bridges, culverts, or for similar activities.

l. To the extent possible, water will be kept flowing in its original path. Water will not be diverted from one stream to another.

m. Road ditch and road surface water will be dispersed frequently with low maintenance measures and structures.

0-40% Slopes - The caution zone for 0-20% slopes is broader than the 20-40% because the ground may be wet and soil may be fine-grained and more easily eroded on the 0-20% slopes.

40-60% Slopes - The caution zone is relatively broad becuase the slope is steep and the vegetative filter may be inadequate to prevent side-cast material from reaching streams. Tail cats, main cable lines, and other logging equipment should generally be kept at least 150' away from the stream.

Over 60% - The caution zone is broad because slopes are steep and side-cast material may move downslope into streams. Tail, cats, main cable lines, and other logging equipment can be used but generally should be kept at least 150' away from the stream channel.

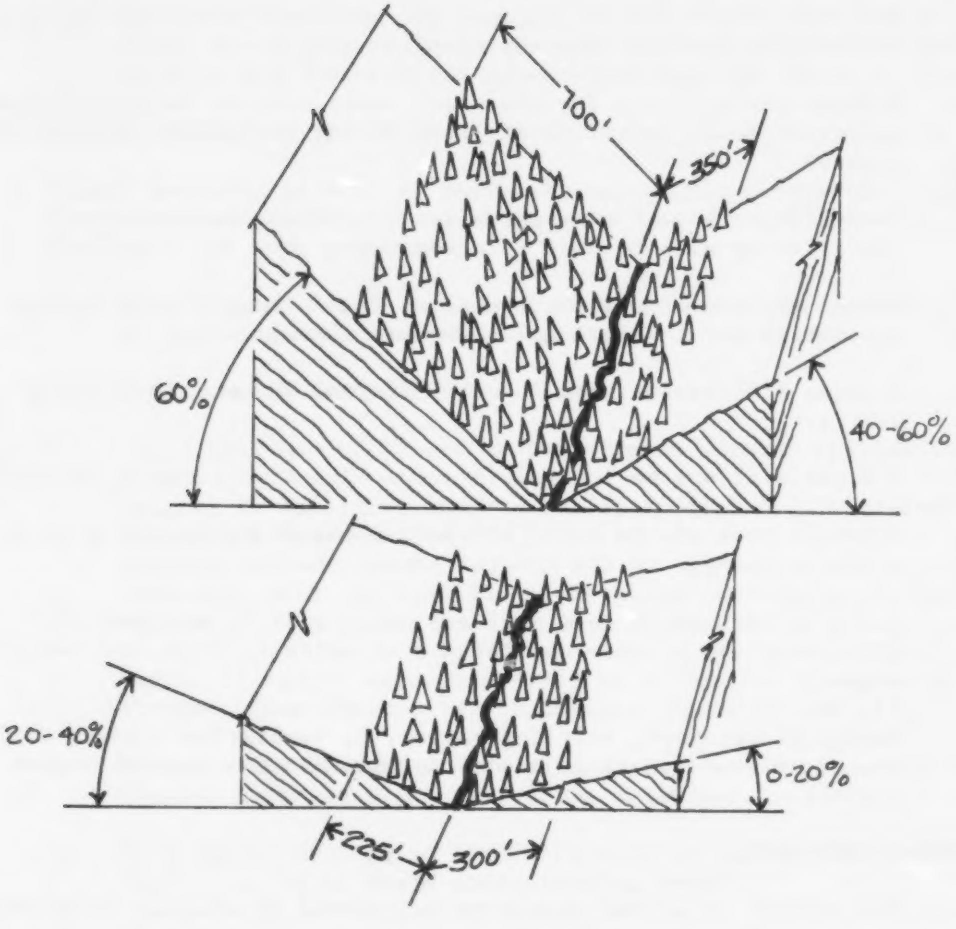

**Figure II-1. Diagram of Sediment Caution Zones**

n. Roads susceptible to erosion or surface breakup should have special design or seasonal use.

o. Erosion on cuts and fills will be minimized by the use of vegetation, fertilizer, or special control measures as soon after construction as feasible.

p. Established vegetation on cuts and fills needs to be maintained.

3. **BRIDGES, CULVERTS, AND OTHER DRAINAGE STRUCTURES**

a. Surface water will be kept flowing in original channels.

b. Generally stream crossings should be made via a bridge or culvert located at natural valley constrictions where there is a narrow flood plain. At selected sites, a ford may be preferable to a bridge or a culvert.

c. Drainage structures and bridges for permanent roads should be designed to handle a 50-year flood.

d. Bridges and culverts for temporary roads will be designed large enough to handle anticipated flows during the period of use and then removed.

e. Disturbance of soil and vegetation for bridge and culvert installation will be kept to a minimum.

f. Bridge approaches will be protected from stream erosion by use of vegetation and physical means such as riprap.

g. Bridges will be designed to catch minimal amounts of floating debris.

h. Bridges will not be located in areas of active slumping or sliding.

i. Culverts that are to carry streamflow should be placed so as to minimize changes to the natural stream characteristics.

j. Culverts that carry road drainage water will be designed for efficiency and minimum maintenance of culvert, fill, and outfall area.

k. Energy dissipators, settling basins, or vegetative filters will be placed below culverts if needed to minimize the erosive impact of outfall.

4. **ROAD MAINTENANCE**

a. The surface of a road should be maintained by shaping it to avoid rutting and resultant accelerated erosion.

b. Do not undercut roadbanks when cleaning ditches.

c. Drainage and erosion control structures will be inspected at least yearly, preferably before spring runoff.

d. Keep the vegetative ground cover intact on road cuts and fills. Ground cover on the driving surface of low-use roads is desirable. Reestablish vegetation where needed.

e. Fertilize to maintain vegetative ground cover on cut and fill slopes.

f. Abandoned roads and trails will be erosion proofed: water bars will be installed, berms may be pulled, the raw surfaces will be revegetated. Sensitive areas should receive special treatment.

g. Pay extra attention when applying dust abatement chemicals, fertilizers, and other chemicals near live water.

h. Culverts and bridges will be kept free of debris.

i. Newly eroded places in roads, road ditches, and around culverts or bridges will be repaired as soon as possible.

## 5. TIMBER HARVEST

Timber harvest, as well as roadbuilding, in all watersheds requires special considerations to maintain water quality. Effects in low-order drainages are more pronounced.

a. Keep logging debris out of streams and other water bodies. Removal of existing debris requires special considerations.

b. Trees should be felled away from streams.

c. Trees will not be yarded across streams without special techniques.

d. Logging in sensitive areas requires special considerations and mitigating measures.

e. Generally skid trails will not be placed in vegetative buffer strips.

f. Buffer strips of vegetation will be maintained along each side of a stream. (See Chapter III, Management Areas 12 and 17).

g. Trees can be removed from riparian areas and streamsides with special techniques and mitigating measures.

h. Skid trails or logging corridors will be located and constructed in such a way as to avoid concentrating runoff.

i. All disturbed lands should have erosion control measures applied: water bars, cross drains, and outslopes. These will be installed before seasonal rains or snowmelt.

j. Seed and fertilizer will be applied to landings, skid trails, and firelines as needed.

k. Tractor skidding generally will not be done on slopes over 40 percent.

l. Generally logs will not be decked near streams.

m. Logging will not be done in areas sensitive to soil compaction or erosion without special considerations and mitigating measures.

### 6. SITE PREPARATION

Site preparation prescriptions will include silvicultural objectives, soil concerns, and water quality.

### 7. HIKING, HORSE, NATURE, CROSS-COUNTRY SKI, AND SNOWMOBILE TRAILS

Hiking, horse, and nature trails should be located, designed, built, and maintained in such a way as to minimize adverse impacts on trails, the soil resource, and water quality.

### 8. PICNIC AREAS, CAMPGROUNDS, AND PACKER CAMPS

Picnic areas, campgrounds, and packer camps will be located, designed, built, and maintained to minimize adverse impacts on water quality.

Provisions for disposal of garbage and human wastes will be made as appropriate.

### 9. WATERSHEDS USED FOR COMMUNITY WATER SUPPLIES (MUNICIPAL)

In addition to the previous BMP's, the specific direction found in FSM 2543 will be applied. A listing of the community water supply watersheds on the Flathead National Forest is also found in this manual.

## J. SOILS

1. Ensure that all resource management activities will maintain soil productivity and minimize erosion through implementation of:
    a. The management direction presented in the Landtype Guidelines (Appendix Q).
    b. Erosion Prevention Standards (Engineering Handbook Supplement).
    c. Tally Lake Ranger District Technical Guide - Soil Compaction.
2. Design or modify all management practices as necessary to protect land productivity.

## K. MINERALS

The following standards will guide the Flathead National Forest in managing lands for mineral resources:

1. Except for Congressional restrictions, all lands shall remain open for exploration and development unless administrative action is justified in the National interest.

2. The Forest will encourage responsible development of mineral resources on National Forest System lands by private industry in a manner that satisfies National and local needs and provides for economically and environmentally sound exploration, extraction, and reclamation.

3. Stipulations which are displayed in Appendix O and which are based on the Environmental Assessment for Oil and Gas Leasing of Nonwilderness Lands on Flathead National Forest, 1980, will be recommended in accordance with the management area direction in Chapter III. Before action is recommended on any lease application, additional site specific analysis of environmental effects will be done.

4. Mineral and energy exploration and development proposals will be processed in a timely manner.

5. Multiple use management decisions will recognize that mineral exploration and development can usually occur concurrently or sequentially with other resource uses.

6. Management direction will reflect geology, energy, and mineral values on National Forest System lands through effective mineral resource data assessment.

7. Areas withdrawn from mineral entry shall be reviewed in accordance with the Federal Land Policy and Management Act of 1976 and subsequent Bureau of Land Management and Forest Service requirements. A listing of all withdrawals, review dates, and review criteria is provided in Appendix P.

## L. LANDS

### 1. LAND USES

a. Allow only those uses of National Forest System land that cannot be reasonably placed on private land.

b. Generally approve special-use permits only when they do not conflict with National Forest goals and public values, and they comply with the intent of the specific management area affected.

c. To determine if a special-use proposal can be approved, an environmental analysis will be required, except where existing approved site plans and environmental analyses have been prepared; i.e., electronic sites. For some special-use proposals, the environmental analysis will include other existing or potential sites and will project future uses. Cost reimbursement may be required for major Forest Service involvement in the review, authorization, construction, and maintenance phases of some proposals and permits.

d. Districts may use letters of permission to regulate special activities not requiring a special-use permit.

e. Access - Access by road permits, road-use permits, USDA easements, or existing Memorandum of Understanding are covered in the Regional Land Access Policy, FSM 2703, R-1 Supplement No. 47.

f. Subdivisions - District Rangers will work closely with city/County planning and zoning organizations when proposed subdivisions affect National Forest resources. Early input into development plans are needed to minimize potential problem areas such as: access, garbage disposal, utilities, water systems, sewage disposal, TV and/or radio antennas, boundary line accuracy, fencing, covenants, fire hazards, and visual problems.

As subdivisions develop, requests for individual use will be discouraged in favor of group or community requests. Initial individual (developer) permits will be phased out and incorporated in community permits.

g. Subdivision Roads - Interior subdivision roads will rarely be allowed on National Forest System lands. One access road per subdivision or original homestead is usually sufficient. Roads used for residential purposes, including those on National Forest land, should be built to County road standards by the developer and deeded to the county.

h. Powerlines and Telephone Lines - All new distribution lines, service drops, and telephone lines will be buried when possible. Exception for service and distribution may be made in cases of intermingled land, where lines cross a small corner of National Forest System land, or where burying lines may cause excessive environmental impacts; e.g., in swampy areas.

i. Water Systems - National Forest System lands will be considered as a water source where water cannot be obtained on private land. Community or group requests will be encouraged whenever a future need is recognized. Rarely will permits be granted for new domestic water sources from other than drilled wells.

j. Sewer System - Generally, private sewer systems will not be permitted on National Forest System lands.

k. Garbage Disposal - At the present time, garbage disposal on National Forest System land is not allowed because need can be met on private land. In the future, because of energy conservation needs, this position may have to be reconsidered. Garbage collection sites may be permitted if there are no unacceptable conflicts with other resource values.

l. TV or Radio Antennas - Only one antenna site or system per subdivision will be allowed.

m. Electronic Sites - Policy is to minimize the number of sites. Group uses will be encouraged to minimize the number of structures. Primarily because of electronic incompatibilities (power and frequency) between users, aggravated by congestion on the Forest's two principal electronic sites (Big Mountain and Black Tail Mountain), it is recognized that additional mountain top sites may need to be developed in the future. New sites may also be necessary to provide broadcast coverage to areas that are blind to existing transmitters and receivers.

Possible sites needed cannot be specifically identified at this time, but development would most likely be in areas designated as roadless recreation. Sites high in electronic potential, that provide the most cost effective opportunities for year-round access and commercial electricity, will be the most desirable for development. If this becomes necessary, the Forest will do a complete environmental analysis to preclude adverse impacts.

n. Occasional Events - Handle requests such as for cross-country ski or snowmobile races, youth or church organization outings, and recreation trails on a case-by-case basis. Do not allow permanent structural facilities to be built or permit use where unacceptable resource damage could occur.

o. Commercial Recreation Developments and Major Facilities - Handle these on a case-by-case basis.

p. Gravel Permits - Where possible, confine public use to existing pits. Heavy use may require controls on use either by Forest Service administration or by private permittees who have a permit to sell gravel. If commercial sources are nearby, do not issue a permit to the public that may be in competition with private sources. In developing new pits, consider all potential uses and controls needed at the pit such as fences, gates, and site rehabilitation.

q. Topsoil - Topsoil removal will not be allowed.

r. Occupancy Trespass - Phase out all nonconforming uses. Innocent trespass of long standing may be authorized by special-use permit. If it is a use normally permitted; e.g., a water transmission ditch, issue a regular permit. The difficulty of moving will have a bearing on the phase-out period. Moveable items such as some cabins or fences will be phased out over a maximum period of 5 years. Deliberate trespass will be phased out within a 2-year period by a short-term permit or legal action.

s. No new summer homesites will be approved. Maintain special-use permits for the existing ones.

t. Disposal of solid waste by Forest Service administrators and their assignees will be done in accordance with State and Federal Disposal Standards.

u. Ensure that all sanitary facilities, Forest Service administered or those under permit, will meet State and Federal standards.

v. Evaluate utility corridors that are in addition to those existing or known as of September 30, 1982, through an environmental analysis and appropriate documentation.

## 2. LAND ADJUSTMENTS

a. Ensure consistency between all landownership adjustments, management direction, and guidelines in land ownership adjustment schedules.

b. Coordinate land adjustment planning with other agencies such as Glacier National Park, Montana Department of Fish, Wildlife, and Parks, Department of State Lands, and local government.

c. Where possible, balance the acreage of Federal and non-Federal lands to be exchanged within the same County in order to minimize effects on the 25 percent fund and other payments-in-lieu-of-taxes.

d. Generally, acquire or exchange fee interest in land. Minimize reservations by the United States and accepting reservations by the grantor.

e. Ensure that land exchanges consist of no more than four to six individual tracts on each side of the exchange.

f. Give emphasis to acquiring remote, isolated, privately owned tracts when intensive subdivision and development of these lands could reduce management options on surrounding National Forest System lands.

g. Utilize donated interests in land whenever possible to meet National Forest management objectives.

h. Work with the County officials to implement comprehensive planning and zoning to meet National Forest objectives.

i. Generally maintain the checkerboard landownership pattern in the Swan Valley except where an environmental analysis indicates an ownership change is needed to respond to public issues or management concerns. Give priority to acquisition of Plum Creek Timber Company, Inc., lands in the Glacier Slough area.

j. Emphasize acquisition of land and interests in land by purchase, exchange, or donation to allow full access to all Flathead National Forest recreation areas and commercial timberland areas.

k. Emphasize acquisiton of all remaining Flathead Wild and Scenic River access sites.

l. Emphasize acquisition of trailhead facility sites and trail right-of-ways, especially along the Mission Mountains Wilderness.

m. Wherever possible, trade timberland for timberland to maintain the current level of commercial forest land.

n. Give special emphasis to preserving Wild and Scenic River values on the Flathead River through donations, exchanges, and purchase. Also consider emphasizing county zoning and self-imposed landowner covenants to protect river values.

## M. FACILITIES

1. Provide a cost effective program of maintenance to necessary administrative facilities. This will protect the investment, provide for public and employee's health and safety in accordance with current building codes and standards, and present a neat, well kept appearance in harmony with its surroundings.

2. Construct new administrative facilities to replace existing structures that are no longer cost effective to maintain or expand or are inadequate to serve the needs of resource management.

3. Establish road design criteria through an interdisciplinary approach and document design criteria in an Area Transportation Document. Information developed for the following items will constitute the design criteria:

   a. Management Area direction and schedule of activities.

   b. Environmental constraints (including wildlife needs, visual objectives, soils, watershed, etc.) consistent with the management area direction.

   c. Safety (indicating need for design elements such as shoulders and turnouts) versus traffic control.

   d. Physical site factors (such as sideslopes, control points and soils).

   e. Traffic requirements (including vehicle or equipment type, traffic volume, season of use, etc.).

   f. Traffic service levels (see Table II-5).

   Transportation planning will meet Forest-wide and management area goals with the minimum miles of new roads.

   Arterial roads are generally classed as Service Levels A or B. Collector roads are generally classed as Service Levels B or C. Nearly all of the new roads remaining to be constructed will be locals and will generally fall into Service Levels C or D.

TABLE II-5 - Traffic Service Needs/Traffic Service Levels - Flathead National Forest

| Traffic Service Needs | Traffic Service Levels | | | |
|---|---|---|---|---|
| | A | B | C | D |
| FLOW | Free flowing with adequate passing facilities. | Congested during heavy traffic such as during peak logging or recreation activities. | Interrupted by limited passing facilities, or slowed by the road condition. | Flow is slow or may be blocked by an activity. Two-way traffic is difficult and may require backing to pass. |
| VOLUMES | Uncontrolled; will accommodate the expected traffic volumes. | Occasionally controlled during heavy use periods. | Erratic; frequently controlled as the capacity is reached. | Intermittent and usually controlled. Volume is limited to that associated with the single purpose. |
| VEHICLE TYPES | Mixed; includes the critical vehicle and all vehicles normally found on public roads. | Mixed; includes the critical vehicle and all vehicles normally found on public roads. | Controlled mix; accommodates all vehicle types including the critical vehicle. Some use may be controlled to minimize conflicts between vehicle types. | Single use; not designed for mixed traffic. Some vehicles may not be able to negotiate. Concurrent use between commercial and other traffic is restricted. |
| CRITICAL VEHICLE | Clearances are adequate to allow free travel. Overload permits are required. | Traffic controls needed where clearances are marginal. Overload permits are required. | Special provisions may be needed. Some vehicles will have difficulty negotiating some segments. | Some vehicles may not be able to negotiate. Loads may have to be off-loaded and walked in. |
| SAFETY | Safety features are a part of the design. | High priority in design. Some protection is accomplished by traffic management. | Most protection is provided by traffic management. | The need for protection is minimized by low speeds and strict traffic controls. |
| TRAFFIC MANAGEMENT | Normally limited to regulatory, warning, and guide signs and permits. | Employed to reduce traffic volume and conflicts. | Traffic controls are frequently needed during periods of high use by the dominant resource activity. | Used to discourage or prohibit traffic other than that associated with the single purpose. |
| USER COSTS | Minimize; transportation efficiency is important. | Generally higher than "A" because of slower speeds and increased delays. | Not important; efficiency of travel may be traded for lower construction costs. | Not considered. |
| ALIGNMENT | Design speed is the predominant factor within feasible topographic limitations. | Influenced more strongly by topography than by speed and efficiency. | Generally dictated by topographic features and environmental factors. Design speeds are generally low. | Dictated by topography, environmental factors, and design and critical vehicle limitations. Speed is not important. |
| ROAD SURFACE | Stable and smooth with little or no dust, considering the normal season of use. | Stable for the predominant traffic for the normal use season. Periodic dust control for heavy use or environmental reasons. Smoothness is commensurate with the design speed. | May not be stable under all traffic or weather conditions during the normal use season. Surface rutting, roughness, and dust may be present, but controlled for environmental or investment protection. | Rough and irregular. Travel with low clearance vehicles is difficult. Stable during dry conditions. Rutting and dusting controlled only for soil and water protection. |

The information developed for the above items is used in establishing design standards for various road elements of travelway width, grade, drainage, and surfacing. It will also set management direction for traffic control and maintenance levels. A Project Development Report will be prepared documenting the selections of final design standards and elements for individual road segments.

4. Miles of existing "open" roads on a yearlong or seasonal basis will generally not increase above current "open" mileage.

The main emphasis for design of the approximately 2,700 miles of local roads remaining to be constructed will be to minimize the amount of soil disturbance through rolling grades and curvilinear alignment, as compatible with planned logging methods.

The significant design elements as applied to local roads will be as follows:

a. Travelway - Local roads will generally be single lane, 12 to 14 feet wide (exclusive of curve widening, fill widening, and turnouts) to accommodate conventional logging systems. These widths will normally accommodate all other vehicular use with the exception of unconventional logging systems and some oil and gas equipment.

b. Grades - Maximum sustained grade will generally be 8 percent. Pitches in excess of 8 percent will be necessary in steep benchy terrain to reach logging system and other physical control points. Sustained grades in excess of 8 percent will be specifically evaluated in the Area Transportation Document for impact on haul, logging system design, soils, and drainage.

c. Drainage - Control of road surface drainage will be emphasized. Erosion control measures such as ditches, cross drains, culverts, drain dips, outsloping, and rolled grades will be utilized as needed.

d. Surfacing - Native soil or aggregate surfaces will be provided as determined by soil support capability, erosion potential, traffic type and volume requirements. Surfacing will not be used to provide user comfort.

e. Alignment - Alignment will respond to topographic features and environmental limitations rather than design speed.

f. Safety Features - Turnouts, stopping sight distance, and signing will be provided as needed for user safety.

g. Economics - All the above design elements will be coordinated to arrive at overall road designs which serve projected traffic requirements at the lowest total cost (considering initial construction, maintenance, and user needs) consistent with environmental protection and safety requirements.

5. The intent of the road management program will be to provide the greatest possible level of public access commensurate with promoting public safety, protecting resources, and minimizing user conflicts. Comprehensive reviews of proposed restrictions will ensure that no more are imposed than necessary, and that a balanced approach in managing motorized vehicles is achieved.

   To assure wildlife security needs within the different Geographic Units, unrestricted road density requirements have been established (refer to Table II-6).

   The intent of the Forest Travel Planning Direction (Appendix C) is that Flathead National Forest roads are open to motorized use unless designated closed or restricted. This direction uses four categories of closures or restrictions along with reasons for the restrictions and the criteria used. The Forest Visitors Map will be reviewed periodically and updated as necessary.

6. Road maintenance will be accomplished to the minimum level commensurate with vehicular use and facility and resource protection. Maintenance levels for any specific road will vary over time and be dependent upon functional use, design standards, development activity, and traffic service level. Over 90 percent of Forest roads will be in maintenance levels 1 through 3 with less than 10 percent in levels 4 and 5.

   Road maintenance levels are as follows:

   Level 1 - This level is basic custodial care as required to protect the road investment and to keep damage to adjacent land and resources to a minimum.

   Level 2 - This level is used on roads where management requires that the road be open for limited passage of traffic. Traffic is normally minor, less than 15 ADT (Average Daily Traffic), usually consisting of administrative uses, permitted use, or specialized traffic. Level 2 requires the basic care of level 1 plus logging out, brushing out, and restoring road prism as necessary to provide passage. Also, route markers and regulatory signs are to be in place and useable.

   Level 3 - This level is used on roads which are opened for public traffic and generally applies when use does not exceed 15 ADT. The road is to be maintained for safe and moderately convenient travel suitable for passenger cars. Route markers and regulatory signs are to be in place and useable.

   Level 4 - This level generally applies when use of a road is between 15 and 100 ADT. At this level, consideration is given to the comfort of the user. These roads are frequently surfaced with aggregate material, but some routes may be paved because of limited aggregate sources and surface replacement cost factors. Route markers and regulatory signs are to be in place and useable.

TABLE II-6 - Unrestricted Road Density Requirements By Geographic Unit - Flathead National Forest

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| Geographic Unit | Density Requirement (Avg. Miles/Section |
|---|---|
| Swan Lake Ranger District | |
| Lower Swan Geographic Unit | * |
| East Shore Geographic Unit | * |
| Noisy Face Geographic Unit | * |
| Island Geographic Unit | 2.0 to 3.2 |
| Upper Swan Geographic Unit | * |
| Spotted Bear Ranger District | |
| Spotted Bear River Geographic Unit | * |
| South Fork Geographic Unit | * |
| Bunker Creek Geographic Unit | * |
| Sullivan Creek Geographic Unit | * |
| Tally Lake Ranger District | |
| Upper Whitefish Geographic Unit | * |
| Whitefish Geographic Unit | * |
| Olney-Martin Creek Geographic Unit | 1.3 to 1.8 |
| Upper Good Creek Geographic Unit | 1.3 to 1.8 |
| Sylvia Lake Geographic Unit | 1.3 to 1.8 |
| Star Meadow-Logan Creek Geographic Unit | 1.8 to 2.2 |
| Tally Lake-Round Meadow Geographic Unit | 1.8 to 2.2 |
| Mountain Meadow-Rhodes Draw Geographic Unit | 1.8 to 2.2 |
| Upper Griffin Geographic Unit | 2.0 to 3.2 |
| Ashley Lake Geographic Unit | 2.0 to 3.2 |
| Hungry Horse Ranger District | |
| Bear Creek-Challenge Cabin Geographic Unit | * |
| Middle Fork Geographic Unit | * |
| Lake Five-Desert Mountain Geographic Unit | * |
| Emery Creek Geographic Unit | * |
| East Side Geograhic Unit | * |
| West Side Geographic Unit | * |
| Columbia Mountain Geographic Unit | * |
| Glacier View Ranger District | |
| Trail Creek Geographic Unit | * |
| Whale-Coal Geographic Unit | * |
| Big Creek Geographic Unit | * |
| Canyon-Teakettle Geographic Unit | * |
| North Fork Valley Geographic Unit | * |

* Road management direction from the Forest-wide standards for grizzly bear management will apply. Any added security needs will be determined during the project analysis (See standard 16 on page II-30).

Level 5 - This level is generally maintained for use of 100 ADT and greater. Roads in this category include both paved and aggregate surfaces. Safety and comfort are important considerations. Abrupt changes in maintenance on adjacent sections of road will be posted to warn travelers until deficiencies are corrected. Route markers and regulatory signs are to be in place and useable.

The Forest Road Maintenance Schedule will be prepared annually to respond to operational and road use needs and objectives.

## N. AIR

Coordinate all Forest Service management activities to meet the requirements of the State Implementation Plan, State Smoke Management Plan, and Federal air quality standards.

## O. FIRE MANAGEMENT

1. Fire management will follow the Fire Management Direction in Appendix G which will ultimately become part of the Forest's Fire Management Action Plan. The effects of fire, both wildfire and prescribed fire, are an integral part of the Forest ecosystem. Refer to Table G-1 in Appendix G for a summary of the suppression responses and prescribed fire options by individual management area. This table also summarizes the average annual acreage burned by wildfire as determined by the base level of Level II fire analysis and the expected acres burned by prescribed fire.

2. Fire management resources will be developed and organized in a manner that is cost effective and commensurate with public safety and protection of private property, as well as being sensitive to public resource values and goals.

3. Prescribed fire management may include the use of planned and unplanned ignitions to meet specific land management objectives. Fire management strategies in the Bob Marshall and Great Bear Wildernesses will be in accordance with the Wilderness Fire Plan, Phase II, for the Bob Marshall and Great Bear Wildernesses (Appendix LL), and will become part of the Forest's Fire Management Action Plan. Prescribed fire direction may be developed for other similar areas that are designated as wilderness or unroaded dispersed recreation.

4. Prescribed fire objectives will be conducted under constraints established by the Montana Airshed Group's Memorandum of Understanding. Air quality will be maintained at adequate levels as described by State, County, and Federal direction. All prescribed burns conducted on Flathead National Forest land will be governed by this direction and meet this objective.

5. On all portions of the Forest, appropriate fire suppression responses to wildfire will be control, confinement, or containment (Appendix G). These initial attack strategies will be developed on the basis of economics, resource values, threat to life and property, and current and projected weather conditions.

## P. INSECT AND DISEASE

1. Consider integrated pest management strategies in project analysis and design. Project silvicultural prescriptions will emphasize treatments that reduce losses due to insects and/or disease.

2. Pesticides (including herbicides) will be recommended for application only if the environmental analysis indicates that alternative is clearly superior to other alternatives, that the review and approval process has been completed, and that short-term and/or long-term risks to human health and safety are negligible according to available scientific evidence.

## Q. LAW ENFORCEMENT

Support achievement of management direction through enforcement of laws and regulations.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

# III. Management Area Direction

The National Forest land within the Flathead National Forest boundary has been divided into 22 MA's (Management Areas), each with different management goals, resource potential, and limitations. Some MA's are given seperate designations by letter where a variation in management direction is needed (i.e., MA's 2, 2A, and 2B). The management areas are shown on the accompanying map, which can be used for reference. Large scale (1"/mile) maps which show MA boundaries in detail are on file in the Forest Supervisor's Office.

Except for those Congressionally or Administratively established boundaries, the management area boundaries are not firm lines and do not always follow easily found topographic features, such as major ridges. The boundaries represent a transition from one set of opportunities and constraints to another with management direction established for each. The boundaries are flexible to assure that the values identified are protected and to incorporate additional information gained from further on-the-ground reconnaissance and project level planning.

The Forest-wide management direction included in Chapter II of this Plan applies to all management areas.

Chapter III describes each management area, sets the goals, and provides the management standards by resource or activity. A schedule of management practices, and the monitoring requirements for each area are also included.

Portions of some MA's are being recommended for wilderness. Proposed wildernesses are shown on the accompanying management area map and the geographic unit maps in Chapter IV. Until Congress reaches a decision, areas recommended for wilderness will be managed to maintain all wilderness values. If not classified by Congress, these proposed wildernesses will revert to the underlying MA designation and will be managed as outlined in this chapter.

Acreages and timber suitability are listed by Management Area in Table III-1 at the end of this chapter.

## MANAGEMENT AREA 1

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**DESCRIPTION**

Management Area 1 (42,869 acres*) consists of nonforest lands and timberlands where timber management is uneconomical or currently technologically infeasible due to topographic features.

**GOALS**

Maintain the present condition with minimal investment for resource activities, while protecting the basic soil, water, and wildlife resources. Generally, these areas will retain a natural appearance.

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 916 acres.

**STANDARDS**

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:

Water

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.
2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.
3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

Recreation

Trails

1. Trail construction is allowed to access and meet adjacent Management Area objectives. Trail closures will be implemented where necessary to meet objectives of adjacent Management Areas and/or to prevent resource or trail damage.

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* Includes proposed wilderness acres.

## Wilderness

1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

## Timber

1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

2. Removal of timber salvage, firewood, and other forest products may occur where opportunities exist.

## Facilities

Roads

1. Road construction is allowed to meet adjacent management area objectives. Road closures will be implemented where necessary to meet objectives for adjacent management areas and/or to prevent resource or facility damage.

## Wildlife and Fish

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

## Protection

Fire Suppression

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. The appropriate suppression response will be based on minimal investment. Unplanned ignition prescribed fire procedures may be implemented on completion of site specific plans to enhance designated resource values.

Insect and Disease

1. No suppression of insect and disease would occur unless adjacent resource values are threatened.

## Minerals

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

Visual Quality

1. **VQO's (Visual Quality Objectives) for this Management Area are not specified. VQO will largely be determined by the adjacent management areas.**

Lands

1. **These lands are not excluded from or need not be avoided by utility corridors (see Corridor Planning, Appendix J).**

## Schedule of Management Practices (Average Annual Amount)

No management practices are scheduled.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 5, 8, 10, 13, 14, 16-25, 38, 48, 53, 54, and 57-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

## MANAGEMENT AREAS 2, 2A, 2B, 2C, 2D, 2E, 2F

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**DESCRIPTION**

The following Management Areas consist of unroaded lands that offer a variety of dispersed recreation opportunities.

Management Area 2 (62,599 acres*) consists of unroaded lands suited for dispersed recreation that meet the ROS (Recreation Opportunity Spectrum) classification of primitive.** This Management Area includes portions of the west face of the Swan Range from the southern Forest boundary north to and inclusive of the Lion Creek drainage. This Management Area also includes portions of the upper Spotted Bear River area (on the Spotted Bear Ranger District) and the Le Beau area (on the Tally Lake Ranger District).

Management Area 2A (107,203 acres*) consists of unroaded lands suited for dispersed recreation that meet the ROS classification of semiprimitive nonmotorized.** This Management Area occurs throughout the Forest and includes the Whitefish Divide and several other alpine ridges. It also includes Glacier Slough on the Swan Lake Ranger District.

Management Area 2B (118,079 acres*) consists of unroaded lands suited for dispersed recreation that meet the ROS classification of semiprimitive motorized.** This Management Area occurs throughout the Forest. It includes portions of the high elevation lands of the Swan Range north of the Lion Creek drainage.

Management Area 2C (8,934 acres) consists of lands suited for dispersed recreation that meet the ROS classification of roaded natural appearing.** This Management Area is mostly located on the Tally Lake Ranger District.

Management Area 2D (526 acres) consists of lands suited for dispersed recreation and recommended as a candidate RNA (Research Natural Area). Management Area 2D is located in the Le Beau area of the Tally Lake Ranger District and meets the ROS classification of primitive.**

Management Area 2E (184 acres) consists of lands suited for dispersed recreation and recommended as a candidate RNA and generally called the "Swan River Island." This area contains land located south of Swan Lake meeting the ROS classification of semiprimitive nonmotorized.**

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* Includes proposed wilderness acres.

** See Appendix A for definitions of the ROS system classifications.

Management Area 2F (260 acres) consists of lands suited for dispersed recreation and recommended as a candidate RNA. Management Area 2F is located in the Le Beau area of the Tally Lake Ranger District and meets the ROS classification of semiprimitive motorized.*

GOALS

2 thru 2F

Provide a variety of primitive and semiprimitive recreation opportunities. This Management Area will provide wildlife and fish habitat, including security from human disturbance.

2

Dispersed recreation opportunities will be managed to meet the primitive ROS classification.

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 44,709 acres.

2A

Dispersed recreation opportunities will be managed to meet the semiprimitive nonmotorized ROS classification.

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 15,354 acres.

2B

Dispersed recreation opportunities will be managed to meet the semiprimitive motorized ROS classification.

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 9,054 acres.

2C

Dispersed recreation opportunities will be managed to meet the roaded natural appearing ROS classification.

2D, 2E, 2F

If the Forest's recommendations for RNA's are approved, manage areas 2D, 2E, and 2F as Research Natural Areas, allowing natural vegetative changes to occur with minimum interference. If not approved, management of areas 2D, 2E, and 2F will be guided by the direction provided for Management Areas 2, 2A, and 2B, respectively.

STANDARDS

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply in this Management Area:

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* See Appendix A for definitions of the ROS system classifications.

The specific management direction for Research Natural Areas, including research activities will be incorporated as Forest Plan amendments upon establishment of the RNA.

## Recreation

2 thru 2D

1. Maintain existing facilities such as trails, trailheads, toilets, hitch racks, stock ramps, registration boxes, and informational signs.
2. Consider the Management Area's ROS classification in determining trail maintenance levels.

2

1. In the Swan Face portion of Management Area 2, high priority trail maintenance is emphasized for those trails that provide access to the Bob Marshall Wilderness (see Appendix D).
2. Additional permanent outfitter base camps will not be permitted.
3. Maintain trails for nonmotorized use. Permit the use of motorized equipment only for trail maintenance, area administration, and emergency situations.
4. Consider additional facility development to prevent resource damage only. At that point, consider development of primitive campsites and facilities (e.g., brush out and level spots, toilets, and fire rings).

2A

1. Maintain trails for nonmotorized use.
2. Develop additional trails where feasible to expand recreation opportunities (e.g., loops and tie-ins to campground complexes).
3. In the Glacier Slough portion of this management area, do not consider additional facility development unless use grows to the point where resource damage occurs. At that point, consider development of primitive campsites and facilities. Permit but do not encourage motorized public access. If conflicts develop between motorized and nonmotorized use, develop mitigation measures or close the area to motorized use.

2A, 2B

1. Develop minimum facility campsites (e.g., level and brush-out spots) at heavily used recreation spots, especially those that are water oriented, to protect resources by encouraging camping away from the water.

## Recreation (continued)

2B

1. Within this Management Area, develop the Stillwater River Float Trail on the Tally Lake Ranger District.
    - Maintain a natural appearing shoreline.
    - Maintain the Upper Stillwater Occupancy Site.
    - Develop a sign program to designate trail hazards and portages.
    - Nominate as a National Recreation Float Trail (NRT) by January 1987.
2. While providing motorized access opportunities, some trails will be maintained for nonmotorized use. Permit but do not encourage motorized use of trails.
3. Develop additional trails where feasible to expand recreation opportunities (e.g., loops and tie-in's to campground complexes).

2C

1. Maintain trails for motorized access opportunities.

2D, 2E, 2F

1. Permit activities that do not jeopardize the area's potential for RNA designation.

## Wilderness

2, 2A, 2B

1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

## Visual Quality

2 thru 2F

1. The VQO (visual quality objective) will be retention.
2. Use of prescribed fire may depart from this VQO.

## Wildlife and Fish

2 thru 2C

1. Use prescribed fire to improve habitat for wildlife.
2. Trees and shrubs may be planted or removed to maintain or enhance vegetative diversity.
3. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

## Wildlife and Fish (continued)

4. Maintain the number and distribution of snags to achieve 100 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 225 snags/100 acres, composed of:

   14 snags greater than 20" d.b.h.
   136 snags greater than 12" and up to 20" d.b.h.
   75 snags greater than 10" and up to 12" d.b.h.

   Consideration will be given to location and availability of snags in adjacent management areas.

2B

1. Prohibit overnight camping on Clayton Island (Hungry Horse Ranger District) until August 1 each year to protect wildlife habitat.

## Water

2 thru 2F

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

## Timber

2 thru 2C

1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled. Allow removal of timber salvage, firewood, and other forest products from existing open roads when recreation values can be protected or enhanced.

2. Cone collection, seed production areas, and tree improvement projects, while not emphasized, are generally compatible.

2D thru 2F

1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

## Minerals

| | | |
|---|---|---|
| 2 thru 2F | 1. | Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation. |
| | 2. | Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). |
| 2D, 2E, 2F | 1. | Plans or permits related to minerals activities will be approved only if such activities would not jeopardize the area's potential for RNA designation. Surface occupancy of the area will not be permitted. |

## Lands

| | | |
|---|---|---|
| 2A | 1. | Place high priority on acquiring lands in the Glacier Slough area. |
| 2B | 1. | Place high priority on acquiring lands adjacent to the Stillwater Recreation Float Trail. |
| 2 thru 2C | 1. | Land acquisition generally will be considered to protect roadless values or for trail and trailhead easements. |
| 2 thru 2F | 1. | These Management Areas are avoidance areas for utility corridors (see Appendix J). |

## Facilities

| | | |
|---|---|---|
| Roads<br>2 thru 2F | 1. | Roads will not be constructed for the management of surface resources. If road construction is required to control insect and disease epidemics, this plan will be amended. |
| 2 thru 2C | 1. | Roads constructed for minerals activities will be closed to the general public and will be obliterated and revegetated when no longer needed. |
| 2D, 2E, 2F | 1. | No roads will be constructed. |

## Prescribed Fire

| | | |
|---|---|---|
| 2 thru 2C | 1. | Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G. |
| | 2. | Prescribed fire may be used to enhance resource values and reduce hazardous fuel accumulation. Unplanned ignition prescribed fire procedures may be implemented on-site specific plans to enhance designated resource values and to allow fire to assume it's natural ecological role. |

## Protection

| | | |
|---|---|---|
| Fire Suppression 2 thru 2C | 1. | Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G. |
| | 2. | The appropriate suppression response will be compatible with the goals of this management area. |
| 2D, 2E, 2F | 1. | Control is usually the only appropriate suppression response until replaced by RNA management direction. |
| | 2. | District Ranger approval is required to implement suppression tactics which involve application of aerial retardants or employ mechanical methods of soil displacement. |
| 2A | 1. | In the Glacier Slough area (Swan Lake Ranger District), aggressive fire control action will be applied due to the small area and the mixed ownership pattern. |

## Range

| | | |
|---|---|---|
| 2 thru 2F | 1. | Existing domestic livestock use will be permitted to continue. Adjustments in AUM's may be made to ensure compatibility with Management Area goals. |

## Schedule of Management Practices (Average Annual Amount)

| Management Practice | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Trail Construction/ Reconstruction | Miles | 2.0 | 2.0 |
| Soil & Water Improvement | Acres | 8.0 | 8.0 |
| T&E Habitat Improvement | Acres | 50.0 | 50.0 |
| Wildlife Habitat Improvement | Acres | 20.0 | 20.0 |
| Range Improvement | Acres | 5.0 | 5.0 |

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 5, 8, 10, 13, 14, 16-25, 38, 48, 53, 54, and 57-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

**DESCRIPTION**

The following Management Areas consist of nonforested lands and timberlands that are suited for amenity value resources.

Management Area 3 (40,257 acres*) consists of nonforest lands and timberlands where timber management is uneconomical and/or the area is more suited for amenity value resources. Area 3 occurs throughout the Forest.

Management Area 3A (495 acres) consists of timber land recommended as a RNA (Research Natural Area). It is located north of Woods Bay on the east shore of Flathead Lake in the Swan Lake Ranger District.

**GOALS**

3

Manage to maintain or enhance amenity values which include nongame wildlife species, visual quality, old growth, and water quality. Generally, the area will provide wildlife and fish habitat, including security from human disturbance. Recreation opportunities will be provided where they won't interfere with wildlife and fish values.

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 395 acres.

3A

If the Forest's recommendation for RNA designation is approved, this area will be managed as a Research Natural Area, allowing natural vegetative changes to occur with minimum interference. If not approved, management of the area will be guided by the direction provided for Management Area 3.

**STANDARDS**

**In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:**

The specific management direction for research natural areas, including research activities planned for the area, will be incorporated as Forest Plan amendments upon establishment of the RNA.

Recreation

3

1. Manage to meet the appropriate ROS (recreation opportunity spectrum) guidelines (see Appendix A).
2. Existing facilities such as trails, trailheads, toilets, hitch racks, stock ramps, registration boxes and information signs, will be maintained if

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* Includes proposed wilderness acres.

## Recreation (continued)

consistent with the management goals. Trail construction is allowed to access and meet adjacent Management Area objectives if consistent with the management goal of this area. Trail closures will be implemented where necessary to meet Management Area objectives and/or to protect the facility.

3A

1. Permit activities that do not jeopardize this area's potential for RNA designation.

## Wilderness

3

1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

## Visual Quality

3

1. The VQO (visual quality objective) is retention.

## Wildlife and Fish

3

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.
2. Maintain the number and distribution of snags to achieve 100 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum, 225 snags/100 acres, composed of:

   14 snags greater than 20" d.b.h.
   136 snags greater than 12" and up to 20" d.b.h.
   75 snags greater than 10" and up to 12" d.b.h.

3. Use of prescribed fire for wildlife habitat improvement is compatible.

## Timber

3

1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.
2. Allow removal of timber salvage, firewood, and other forest products from existing open roads when amenity resource values can be protected or enhanced.
3. Cone collection, seed production areas, and tree improvement projects, while not emphasized, are generally compatible.
4. No investments will be made in cultural treatments.

Timber (continued)

3A

1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

Water

3

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

Minerals

3, 3A

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q).

3A

1. Plans or permits related to minerals activities will be approved only if such activities would not jeopardize the area's potential for RNA designation. Surface occupancy of the area will not be permitted.

Lands

3, 3A

1. These Management Areas are avoidance areas for utility corridors (see Appendix J).

Facilities

Roads
3, 3A

1. Roads will not be constructed for the management of surface resources. If road construction is required to control of insect and disease epidemics, this plan will be amended.

3

1. Roads constructed for mineral activities will be closed to the general public, and will be obliterated and revegetated when no longer needed.

3A

1. No roads will be constructed.

## Prescribed Fire

3, 3A

1. Prescribed fire may be used to enhance resource values and reduce hazardous fuel accumulation. Unplanned ignition prescribed fire procedures may be implemented on-site specific plans to enhance designated resource values and to allow fire to assume it's natural ecological role.

2. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

## Protection

Fire Suppression
3, 3A

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. The appropriate suppression response will be compatible with the goals of this management area.

3A

1. Control is usually the only appropriate suppression response until replaced by RNA management direction.

## Schedule of Management Practices (Average Annual Amount)

| | | | |
|---|---|---|---|
| T&E Habitat Improvement | Acres | 15.0 | 15.0 |

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 5, 8, 10, 13, 14, 16-25, 38, 48, 53, 54, and 57-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

# MANAGEMENT AREA 4

**DESCRIPTION**

Management Area 4 (314 acres) consists of all campgrounds, picnic areas, boat launches, and other developed recreation sites excluding Big Mountain Winter Sports Area.*

**GOALS**

Provide for developed recreation opportunities with management to the full-service level of existing developed facilities.**

Full service implies that, in addition to protecting public safety and health, the Forest visitor is to be provided a pleasant experience.

**STANDARDS**

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:

### Recreation

1. All facilities will be clean and well kept, potential hazards eliminated, garbage bins emptied frequently, and resource or facility damage prevented.

### Visual Quality

1. The visual quality of the developed sites will be maintained to the extent possible.

### Cultural Resources

1. Emphasize interpretation where compatible with protection of the cultural resources.

### Wildlife and Fish

1. Implement habitat improvement projects for small mammals, birds and other species adapted to developed sites, if cost-effective and compatible with developed site management.
2. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

### Range

1. Grazing of domestic livestock is not permitted.

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* Big Mountain Winter Sports Area is designated Management Area 20.

** See the Forest Service standards and guidelines on Cleaning Recreation Sites, July 1980, USDA Forest Service #80231801, page 6-7.

Timber

1. Developed sites are classifed as unsuitable for timber management, and timber harvest will not be scheduled.

2. Hazard trees will be removed.

3. TSI (timber stand improvement) and reforestation will be done only to improve recreational or visual opportunities.

4. Noncommercial and commercial cutting and removal of firewood is not permitted.

Water

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

Minerals

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation. Withdrawal will be made only if a potential minerals related activity threatens to impact the intended or actual surface use of the area(s).

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q).

Facilities

1. Maintain roads and trails to the standards necessary for the protection of other resources. Recognize the ROS (recreation opportunity spectrum) classification of the surrounding area.

2. Maintain, alter, or replace developed facilities to meet recreation management objectives, laws, and regulations. Assure user safety, protection of investments, and accessibility to special populations (handicapped, elderly).

Lands

1. This Management Area is an avoidance areas for utility corridors (see Appendix J).

Prescribed Fire

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.
2. The use of prescribed fire must be compatible with the character of the developed site.

Protection

Fire Suppression

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.
2. The objective of fire suppression will be prompt control at all intensity levels. Suppression tactics that least alter the landscape or damage other resources will be utilized.

Insect and Disease

1. Insect and disease infested trees may be removed or treated.

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## Schedule of Management Practices (Average Annual Amount)

No management practices are scheduled.

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## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 3, 48, 58, 59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

# MANAGEMENT AREA 5

## DESCRIPTION

Management Area 5 (3,753 acres) consists of roaded timberlands in areas of high scenic value. Much of this Management Area lies along the Swan Valley Highway (State Highway #83).

## GOALS

One of the primary management objectives consists of maintaining a pleasing, natural-appearing landscape in which management activities are not evident. Management activities may only repeat form, line, color, and texture which are frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, pattern, etc., should not be evident.

The Forest Service will manage the timber resource with roads in a manner which compliments and protects high scenic values, and, where applicable, complies with the Swan Valley Highway Landscape Management Plan.* Where possible, minimize insect, disease, and fuel buildups that reduce other resource values.

All resources will be managed consistent with the Retention VQO (Visual Quality Objective). Dispersed recreation activities in a roaded natural-appearing environment will be permitted.

## STANDARDS

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:

### Visual Quality

1. The VQO is Retention.
2. Prior to implementing any of landscape altering activities, complete a visual analysis which encompasses that portion of this Management Area affected by the project.
3. The visual analysis process will occur during development of, and be coordinated with, all project planning for proposed resource activities.
4. Use appropriate mitigation measures to achieve and/or maintain the Retention VQO as defined by the following criteria:

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* Implemented in 1979 by a Memorandum of Understanding aimed at maintaining the scenic qualities adjacent to the Swan Valley Highway.

Low Visual Absorption Capability*

- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems.
- The most sensitive layout areas are primary ridges and focal points.
- Even-aged units shall generally not exceed 5 acres in size.

Medium Visual Absorption Capability*

- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems. Even-aged units shall generally not exceed 10 acres in size.

High Visual Absorption Capability*

- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems. Even-aged units shall generally not exceed 15 acres in size.

The following criterion applies to all the Visual Absorption Capability classifications:

- Road cuts and fills should not be evident to the casual Forest visitor.

5. Areas which do not currently meet the Retention Visual Quality Objective will be rehabilitated where feasible.

Recreation

1. Trail maintenance and construction are compatible so long as the retention VQO and timber management objectives are met.

Timber

1. Lands are classified as suitable for timber management, and timber harvest will be scheduled.
2. The size of units and types of harvest are discussed under Visual Quality.

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* Refer to Chapter VII GLOSSARY, under Visual Absorption Capability.

### Timber (continued)

3. Project design will determine the most cost effective logging and transportation system that meets the Management Area's visual objectives. Decisions on logging and transportation sytems should consider all treatments needed over a timber rotation.

### Wildlife and Fish

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

2. Maintain the number and distribution of snags for at least 50 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 112 snags/100 acres composed of:

   7 snags greater than 20" d.b.h.
   68 snags greater than 12" and up to 20" d.b.h.
   37 snags greater than 10" and up to 12" d.b.h.

   Consideration will be given to location and availability of snags in adjacent management areas.

### Water

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

### Minerals

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

## Facilities

Roads

1. Design and construct roads which are in harmony with the Retention VQO. Road location and design consider the benefits to future recreation uses. The transportation system must be kept in the condition necessary to meet management direction and to protect the investment. Roads must be maintained to the appropriate level for protection of the basic resources and for safety.

2. Road management activities must be responsive to Forest resource needs as identified in site-specific analysis. Road operations such as level of use and maintenance will be determined on a case-by-case basis during project level planning to meet objectives for adjacent management areas and/or to prevent resource or facility damage.

3. Road closures considered necessary to ensure wildlife security, meet recreation use objectives, and provide resource protection will be implemented.

## Prescribed Fire

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. Fire may be prescribed to reduce activity fuel accumulations to retention VQO levels or maintain the retention VQO.

## Protection

Fire Suppression

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. Control is usually the only appropriate suppression response. Line officer approval is required to implement suppression tactics which involve soil displacement by mechanical means.

## Lands

1. These lands are not excluded from or need not be avoided by utility corridors (see Appendix J).

## Schedule of Management Practices (Average Annual Amount)

| Management Practice | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Clear Cut-Seed Cut | MMBF | 0.2 | 0.2 |
| | Acres | 11.0 | 10.0 |
| Total Timber Harvest* | MMBF | 0.2 | 0.2 |
| Fuels Management | Acres | 11.0 | 10.0 |
| Silviculture/Stand Exams | Acres | 950.0 | 950.0 |
| Reforestation | Acres | 11.0 | 10.0 |
| Timber Stand Improvement | Acres | 10.0 | 10.0 |

* The proposed 10-year timber sale offerings schedule is presented in Appendix M

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 4, 5, 8, 10, 13, 14, 16-25, 31-41, 48-54, and 57-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

READEX FICHE

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**DESCRIPTION**

The following Management Areas consist of roaded timberlands in visually sensitive areas.

Management Area 7 (42,861 acres) consists of timberlands in areas of high scenic value.

Management Area 7A (5,934 acres) consists of very productive timberlands located in the Noisy Face Geographic Unit. These areas have high scenic value due to the visual importance of this area to communities in the Flathead Valley.

**GOALS**

**7, 7A**

One of the primary management goals consists of maintaining a pleasing, natural-appearing landscape in which management activities are not dominant. The Forest Service will manage the timber resource with roads in a manner which compliments and protects high scenic values. Where possible, minimize insect, disease, and fuel buildups that reduce resource values.

Maintain or create natural-appearing, diverse patterns of vegetation, using various silvicultural systems. These goals will be accomplished by limiting application of even-age timber management practices. Treatment areas will be designed to reflect the form, line, color or texture common to the characteristic landscape in a particular viewing area.

All resources will be managed consistent with the Partial Retention VQO (Visual Quality Objective). Dispersed recreation activities in a roaded natural-appearing environment will be permitted.

**7A**

The Noisy Face Geographic Area contains special visual and recreational qualities due to it's proximity to the Flathead Valley. The management objective is to maintain or enhance the quality of these resources while utilizing a portion of the timber production capabilities of the area.

In consideration of the importance placed on the landscape quality of this area, man-induced change is intended to take place slowly and on an appropriate scale.

**STANDARDS**

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following Standards will apply to this Management Area.

Visual Quality

**7, 7A**

1. The VQO is Partial Retention.
2. Prior to implementing any landscape altering activities, complete a visual analysis which encompasses that portion of this Management Area affected by the project.

## Visual Quality (continued)

7, 7A 3. The visual analysis process will occur during development of, and be coordinated with all project planning for proposed resource activities.

4. Use appropriate mitigation measures to achieve and/or maintain the Partial Retention VQO as defined by the following criteria:

### Low Visual Absorption Capability *

7, 7A
- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems.
- The most sensitive layout areas are primary ridges and focal points.

7 ONLY
- Even-aged units shall generally not exceed 10 acres in size.

7A ONLY
- Even-aged management units will generally not exceed 2 acres.

### Medium Visual Absorption Capability *

- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems. Even-aged units shall generally not exceed 15 acres in size.

### High Visual Absorption Capability *

- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems. Even-aged units shall generally not exceed 25 acres in size.

The following criteria apply to all the Visual Absorption Capability classifications:

7, 7A
- Road cuts and fills should be subordinate to the characteristic landscape when viewed from primary viewpoints as determined by the Viewshed Analysis.

7,7A 5. Areas which do not currently meet the Partial Retention Visual Quality Objective will be rehabilitated where feasible.

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* Refer to Chapter VII GLOSSARY, under Visual Absorption Capability.

## Timber

7,7A 1. Lands are classified as suitable for timber management, and timber harvest will be scheduled. The size of units and types of harvest are discussed under Visual Quality.

2. Project design will determine the most cost effective logging and transportation system that meets the management area's visual objectives. Decisions on logging and transportation systems should consider all treatments needed over a timber rotation.

7A 1. Timber will be managed and scheduled for harvest complementary to landscape management considerations. As a result, the rate of implementation will be slow, and only 3 MMBF will be scheduled for harvest in decade one (refer to Appendix M for timber sale specifics).

2. Retain the old growth hemlock stand adjacent to the Strawberry Lake Road and trail head.

## Recreation

7A 1. Develop and implement ORV (Off Road Vehicle) and road management direction that provides security for wildlife but continues to provide reasonable access. Provide for current recreation uses such as motorized recreation, berrypicking, hunting, hiking, and firewood gathering. Enhance cross country-skiing and snowmobiling opportunities. Manage motorized use to reduce adverse effects by obtaining support of clubs and other users.

## Wildlife and Fish

7, 7A 1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

2. Maintain the number and distribution of snags for at least 50 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 112 snags/100 acres composed of:

7 snags greater than 20" d.b.h.
68 snags greater than 12" and up to 20" d.b.h.
37 snags greater than 10" and up to 12" d.b.h.

Consideration will be given to location and availability of snags in adjacent management areas.

**Water**

7, 7A

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

**Minerals**

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

**Facilities**

Roads
7, 7A

1. Design and construct roads which are in harmony with the Partial Retention VQO. Road location and design consider the benefits to future recreation uses. The transportation system must be kept in the condition necessary to meet management direction and to protect the investment. Roads must be maintained to the appropriate level for protection of the basic resources and for safety.

2. Road management activities must be responsive to Forest resource needs as identified in site-specific planning. Road operations such as level of use and maintenance will be determined on a case-by-case basis during project level planning to meet objectives for adjacent management areas and/or to prevent resource or facility damage.

**Facilities** (continued)

3. Road closures considered necessary to ensure wildlife security, meet recreation use objectives, and provide resource protection will be implemented.

7

1. Within the East Shore Geographic Unit (see Chapter IV) it may be necessary to restrict motorized access during road construction and logging to help prevent degradation of public water supplies in the area.

7A

1. Utilize the existing road system to the extent possible. During the first decade, no more than three miles of new road will be constructed along with one mile of major reconstruction.

**Lands**

7, 7A

1. Special use proposals must meet the goals of this Management Area.

2. These lands are not excluded from or need not be avoided by utility corridors (See Appendix J).

**Prescribed Fire**

7, 7A

1. Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G.

2. Hazard reduction will utilize tactics that will least alter the landscape.

3. When planning on treating activity fuel with prescribed fire, the District Ranger should have a cost comparison of alternative fuel treatment options and risk analysis.

**Protection**

Fire Suppression

7,7A

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. Control of wildfire will be the dominant suppression response. Confine and contain options may be used.

Insect & Disease

7,7A

1. The timber resource should be managed in such a manner as to prevent insect and disease buildups that reduce resource values. This will support the primary management emphasis of maintaining a pleasing, natural-appearing landscape in which management activities are not dominant.

**Range**

7, 7A 1. Existing domestic livestock use will be permitted to continue. Adjustments in AUM's may be made to ensure compatibility with Management Area goals.

## Schedule of Management Practices (Average Annual Amount)

| Management Practice | Units | Proposed[1] Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Soil & Water Improvement | Acres | 8.0 | 8.0 |
| Wildlife Habitat Improvement | Acres | 15.0 | 15.0 |
| Clear Cut-Seed Cut | MMBF | 2.2 | 3.3 |
| | Acres | 149.0 | 218.0 |
| Shelterwood-Removal Cut | MMBF | 0.1 | 0.2 |
| | Acres | 12.0 | 30.0 |
| Salvage/Sanitation | MMBF | 0.2 | 0.2 |
| | Acres | 160.0 | 150.0 |
| Total Timber Harvest* | MMBF | 2.5 | 3.7 |
| Fuels Management | Acres | 321.0 | 398.0 |
| Silviculture/Stand Exams | Acres | 5,000.0 | 5,000.0 |
| Reforestation | Acres | 161.0 | 248.0 |
| Timber Stand Improvement | Acres | 400.0 | 400.0 |
| Road Construction | Miles | 4.0 | 3.0 |
| Road Reconstruction | Miles | 1.0 | 1.0 |
| Range Improvement | Acres | 5.0 | 5.0 |

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 4, 5, 8, 10, 13, 14, 16-25, 30, 31, 41, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

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**DESCRIPTION**

Management Area 8 (7,551 acres) consists of unroaded timberlands in areas of high scenic value.

**GOALS**

One of the primary management objectives consists of maintaining a pleasing, natural-appearing landscape in which management activities are not dominant. The Forest Service will manage the timber resource without roads in this Management Area. Where possible, minimize insect, disease, and fuel buildups that reduce other resource values.

Maintain or create natural-appearing, diverse patterns of vegetation, using various silvicultural systems. These goals will be accomplished by limiting application of even-age timber management practices. Treatment areas will be designed to reflect the form, line, color or texture common to the characteristic landscape in a particular viewing area.

All resources will be managed consistent with the Partial Retention VQO (Visual Quality Objective). Dispersed recreation activities in an unroaded environment will be permitted.

**STANDARDS**

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following Standards will apply to this Management Area.

Visual Quality

1. The VQO is Partial Retention.
2. Prior to implementing any landscape altering activities, complete a visual analysis which encompasses that portion of this Management Area affected by the project.
3. The visual analysis process will occur during development of, and be coordinated with all project planning for proposed resource activities.
4. Use appropriate mitigation measures to achieve and/or maintain the Partial Retention VQO as defined by the following criteria:

Visual Quality (continued)

Low Visual Absorption Capability *

- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems.
- The most sensitive layout areas are primary ridges and focal points.
- Even-aged units shall generally not exceed 10 acres in size.

Medium Visual Absorption Capability *

- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems. Even-aged units shall generally not exceed 15 acres in size.

High Visual Absorption Capability *

- Regeneration harvest will utilize individual tree or group selection, seed tree, shelterwood, or clearcut silvicultural systems. Even-aged units shall generally not exceed 25 acres in size.

5. Areas which do not currently meet the Partial Retention Visual Quality Objective will be rehabilitated where feasible.

Timber

1. Lands are classified as suitable for timber management, and timber harvest will be scheduled. The size of units and types of harvest are discussed under Visual Quality.

2. Project design will determine the most cost effective logging system that meets the Management Area's visual objectives. Decisions on logging systems should consider all treatments needed over a timber rotation.

Recreation

1. Trail maintenance and construction are compatible so long as the partial retention VQO and timber management objectives are met.

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* Refer to Chapter VII GLOSSARY, under Visual Absorption Capability.

## Wildlife and Fish

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

2. Maintain the number and distribution of snags for at least 50 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 112 snags/100 acres composed of:

   7 snags greater than 20" d.b.h.
   68 snags greater than 12" and up to 20" d.b.h.
   37 snags greater than 10" and up to 12" d.b.h.

   Consideration will be given to location and availability of snags in adjacent Management Areas.

## Water

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

## Minerals

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

### Facilities

Roads

1. Roads will not be constructed except for temporary minimum support facilities for aerial harvest systems or as needed to recognize mineral access rights. Any road construction will be guided by the visual analysis.

### Prescribed Fire

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.
2. Hazard reduction will utilize tactics that will least alter the landscape.

### Protection

Fire Suppression

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.
2. Control of wildfire will be the dominant suppression response. Confine and contain options may be appropriate when conditions warrant.

### Lands

1. These lands are not excluded from or need not be avoided by utility corridors (see Appendix J).

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## Schedule of Management Practices (Average Annual Amount)

No management activities are scheduled for this decade.

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## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 4, 5, 8, 10, 13, 14, 16-25, 30, 31, 41, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

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**DESCRIPTION**

Management Area 9 (18,812 acres) consists of timberlands capable of providing whitetailed deer winter habitat. The majority of these lands lie in the Swan River Valley on the Swan Lake Ranger District.

Management Area 9A was deleted between proposed and final Plan.

Management Area 9B (80 acres) consists of timber and nonforest lands capable of providing whitetailed deer winter habitat, and recommended as a candidate RNA (Research Natural Area). It is located along the Little Bitterroot River of the Swan Lake Ranger District.

**GOALS**

9

Provide the size, age, diversity, and distribution of habitat units (both cover and forage areas) suitable for whitetailed deer winter habitat.

Management of other resources must be compatible with the whitetailed deer winter range management goals. All summer recreation activities in a roaded natural-appearing environment are compatible. Winter recreation activities will not be encouraged and may be restricted if conflicts between recreationists and whitetailed deer management occur.

Timber harvest can be used to improve or maintain the optimum relationships of cover to forage. Prescribed burning is also a habitat improvement method.

9B

If the Forest's recommendation for RNA designation is approved, this area will be managed as a Research Natural Area, allowing natural vegetative changes to occur with minimum interference. If not approved, management will be guided by the direction provided for Management Area 9.

**STANDARDS**

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following Standards will apply to this Management Area:

The specific management direction for Research Natural Areas, including research activities will be incorporated as Forest Plan amendments upon establishment of the RNA.

Wildlife and Fish

9

1. Complete a Long-Range Whitetailed Deer Winter Range Activity Schedule for each winter range unit. Utilize this schedule to guide project planning.

Wildlife and Fish (continued)

2. Implement the full range of wildlife habitat improvements.

3. Consider those portions of this Management Area separated by one-half mile or more as separate winter ranges.

4. Manage to achieve at least 50 percent of the area in winter thermal cover.

5. Each managed habitat unit (cover or forage area) will generally be less than 10 acres and shaped to ensure optimum use of the forage produced. Regeneration of each managed habitat unit will include diverse tree species but will feature Douglas-fir (40 percent of the trees, by number) if the site is capable of growing Douglas-fir.

6. Encourage winter logging to better assure a continuous supply of winter food.

7. Adhere to the Forest-wide Standards for grizzly bear management in occupied grizzly bear habitat.

8. Maintain the number and distribution of snags to provide for at least 80 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 180 snags/100 acres composed of:

    11 snags greater than 20" d.b.h.
    109 snags greater than 12" and up to 20" d.b.h.
    60 snags greater than 10" and up to 12" d.b.h.

    Consideration will be given to location and availability of snags in adjacent Management Areas.

Recreation

Trails
9

1. Maintenance or construction of hiking trails is compatible, but ski trails will be evaluated on a case-by-case basis. Trail closures may be implemented to meet Management Area objectives or protect the facility and other resources.

9B

Permit activities that do not jeopardize this area's potential for RNA designation.

Visual Quality

9

1. The visual quality of these Management Areas generally will meet a partial retention visual quality objective.

## Water

9 1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

## Range

9 1. Existing domestic livestock use will be permitted to continue; however, adjustments in AUM's may be made to ensure compatibility with whitetailed deer winter range management goals.

9B 2. Domestic livestock use is not permitted.

## Timber

9 1. Lands are classified as suitable for timber management, and timber harvest will be scheduled.

2. Timber stand improvement will be applied only when adequate winter thermal cover and wildlife movement is assured.

3. The scheduling of timber harvests designed to provide optimum whitetailed deer winter habitat will be specified by the Long-Range Whitetailed Deer Winter Range Activity Schedule.

9B 1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

## Minerals

9 1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

Minerals (continued)

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

9B 2. Plans or permits related to minerals activities will be approved only if such activities would not jeopardize the area's potential for RNA designation.

Lands

9 1. Special uses, land exchanges and rights-of-way proposals will be carefully reviewed to ensure maintenance and enhancement of whitetailed deer winter habitat.

2. These lands are not excluded from or need not be avoided by utility corridors (see Appendix J).

9B 1. This Management Area is an avoidance area for utility corridors (see Appendix J).

Facilities

Roads

9 1. Roads will be closed to motorized vehicles December 1 to May 15 if motorized use has the potential of adversely affecting wintering whitetailed deer populations unless open roads are needed to provide access to other public or private lands or to accomplish habitat improvement projects.

2. Additional road closures may be implemented to meet adjacent Management Area objectives and/or to protect resources or the facility.

3. Road construction and reconstruction activities will be restricted if adverse impacts could occur to whitetailed deer populations.

Prescribed Fire

9 1. Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G.

## Protection

| | | |
|---|---|---|
| Fire Suppression 9 | 1. | Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G. |
| | 2. | The appropriate suppression response will be compatible with the goals of whitetailed deer winter habitat management. |
| 9B | 1. | Control is usually the only appropriate suppression response until replaced by RNA management direction. |

## Schedule of Management Practices (Average Annual Amount)

| Management Practices | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Soil & Water Improvement | Acres | 8.0 | 8.0 |
| Wildlife Habitat Improvement | Acres | 10.0 | 10.0 |
| T & E Habitat Improvement | Acres | 7.0 | 7.0 |
| Clear Cut-Seed Cut | MMBF | 2.5 | 1.8 |
| | Acres | 150.0 | 120.0 |
| Salvage/Sanitation | MMBF | 0.3 | 0.3 |
| | Acres | 166.0 | 150.0 |
| Total Timber Harvest* | MMBF | 2.8 | 2.1 |
| Fuels Management | Acres | 316.0 | 270.0 |
| Silviculture/Stand Exams | Acres | 2,800.0 | 2,800.0 |
| Reforestation | Acres | 150.0 | 120.0 |
| Timber Stand Improvement | Acres | 400.0 | 400.0 |
| Road Construction | Miles | 1.5 | 1.1 |
| Road Reconstruction | Miles | 0.5 | 0.5 |
| Range Improvement | Acres | 10.0 | 10.0 |

* The proposed 10-year timber sale offerings schedule is presented in Appendix M.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 4, 5, 8, 9, 10, 13, 14, 16-25, 30, 31, 41, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

## MANAGEMENT AREAS 10, 10A

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**DESCRIPTION**

The following Management Areas include the Administrative Sites on the Flathead National Forest.

Management Area 10 (1,268 acres) consists of lands designated as Administrative Sites.

Management Area 10A (193 acres), which includes the Condon Tree Improvement Area, consists of timberlands adjacent to the Condon Work Center in the Swan Valley. Capital investments have been made in this area to provide sites for genetic testing of trees and future seed production.

**GOALS**

10 Provide for the continued use of existing facilities at Administrative Sites through a periodic planned preventative maintenance program of sanitary, water, and solid waste systems, buildings and other structures.

10A Establish, protect, and manage outplanting for genetic testing and to provide an economic, accessible, and reliable source of improved seed for reforestation purposes. The visual quality of the landscape will be retained. Recreation use will not be encouraged except for VIS or public information purposes. this Management Area will provide nongame wildlife habitat.

**STANDARDS**

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following Standards will apply to this Management Area:

Timber

10A 1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

2. Conduct evaluations and maintenance operations in accordance with the Flathead 10-year Tree Improvement Program.

Wildlife and Fish

10, 10A 1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

10A 1. Protect plantations from excessive wildlife (game and nongame) damage.

Range

10A 1. Livestock grazing will not be permitted.

**Water**

10, 10A

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

3. Surface and ground water will be protected during any pesticide or herbicide treatments.

**Minerals**

10, 10A

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

**Lands**

10, 10A

1. These lands will not be considered for disposal.

2. These Management Areas are avoidance areas for utility corridors (see Appendix J).

**Recreation**

10

1. Administrative Sites within the boundary of the Wild and Scenic corridor will also follow the direction in MA 18.

**Facilities**

10, 10A

1. Maintain all buildings, potable water, sanitation and solid waste systems to be functionally acceptable under current laws and regulations.

### Facilities (continued)

2. Identify systems requiring major repair, modification, or replacement prior to emergency failure.

10A

1. Transportation and other support facilities may be planned and constructed in support of genetic testing and seed production objectives.

### Protection

Fire Suppression 10,10A

1. Regular periodic inspections will be conducted and aggressive action will be taken to suppress fire, insect, disease, or animal damage to the plantations.

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## Schedule of Management Practices

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Activities will be as scheduled in the Flathead National Forest 10-year Tree Improvement Program (Appendix MM).

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## Monitoring and Evaluation Requirements

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The monitoring requirements from Chapter V that are applicable to these Management Areas are: 2, 4, 5, 48, 51, 52, 58, 59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

## MANAGEMENT AREAS 11, 11A, 11B, 11C

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**DESCRIPTION**

The following Management Areas include lands providing good grizzly bear habitat which consists of natural, relatively open, undisturbed (by humans) areas with good cover and an abundance of perennial succulent herbs and/or fruit-bearing shrubs.

Management Area 11 (69,812 acres), also known as the Trail Creek Grizzly Bear Management Area (Refer to Trail Creek Geographic Unit in Chapter IV), consists of timber and nonforest lands capable of providing grizzly bear habitat.

The Area is located at the north end of Glacier View Ranger District, and will be formally classified within the administrative authorities of the Forest Service. Classification will assure National attention to continued intensive grizzly bear management and highlight the need for research funding.

Management Area 11A (27,476 acres*) consists of timber and nonforest lands capable of providing grizzly bear habitat located in the Bunker Creek area on the Spotted Bear Ranger District.

Management Area 11B (1,592 acres) consists of timber and nonforest land capable of providing grizzly bear habitat and recommended as a candidate RNA (Research Natural Area). It is located in the Tuchuck area of the Glacier View Ranger District.

Management Area 11C (9,852 acres) consists of timberlands capable of providing grizzly bear habitat located on the southern portion of the Swan Lake Ranger District.

**GOALS**
**11, 11A**

Maintain and enhance grizzly bear habitat by implementing appropriate management and investment activities and controlling public access.

Manage for a habitat of approximately 40 percent security cover and about 60 percent open, with good geographic distributions of the following habitat components:

Burns - burns including high elevation areas that produce fruit-bearing shrubs.

Meadows - naturally occurring, open, concave, wet or dry sites at all elevations. These are particularly important at low elevation as spring forage areas.

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* Includes proposed wilderness acres.

**Riparian Areas** - all riparian areas that provide succulent vegetation suitable as bear food.

**Ridgetops** - Important as travel routes between other habitat components.

**Shrubfields** - essentially permanent areas of shrubs created by fire or snow pack at high elevation.

**Sidehill Parks** - naturally, open, sparsely timbered areas, productive for bear food.

**Scree/talus** - unstable loose rock areas, productive for bear food.

**Timber** - Must be adequate to provide connection between the above habitat components.

Management of other resources must be compatible with the grizzly bear management objectives of Management Areas 11 or 11A. The visual landscape may be altered. Nonmotorized recreational opportunities will be provided at current levels, but will not be encouraged and may be restricted if conflicts between recreationists and grizzly bear management occur.

11A In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 9,985 acres.

11B If the Forest's recommendation for RNA designation is approved, this area will be managed as a Research Natural Area, allowing natural vegetative changes to occur with minimum interference. If not approve, management will be guided by the direction provided for Management Area 11.

11C Manage the Swan/Clearwater Divide as an area that provides a secure grizzly bear travel route between the Mission and Swan Mountain Ranges. Desired cover relationship is provided through vegetative manipulation including timber harvest and prescribed burning.

Management of other resources must be compatible with the grizzly bear management objectives of this Management Area. The visual landscape may be altered.

STANDARDS **In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:**

The specific management direction for Research Natural Areas, including research activities will be incorporated as Forest Plan amendments upon establishment of the RNA.

## Wildlife and Fish

11 thru 11C

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

11, 11A, 11C

1. Grizzly bear habitat component mapping and analysis, coordination and consultation with State and Federal wildlife management agencies will be required for all projects.

2. Maintain the number and distribution of snags to provide for at least 80 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 180 snags/100 acres composed of:

   11 snags greater than 20" d.b.h.
   109 snags greater than 12" and up to 20" d.b.h.
   60 snags greater than 10" and up to 12" d.b.h.

   Consideration will be given to location and availability of snags in adjacent Management Areas.

3. Manage adjacent grizzly bear foraging areas (openings) only when previously cut unit sustains adequate hiding cover.*

11, 11A

1. Develop a Long-Range Grizzly Bear Habitat Activity Schedule, with all habitat components mapped and analyzed, prior to allowing any vegetative manipulation of grizzly bear habitat. Utilize this schedule to guide project planning.

2. Provide the full range of habitat improvement practices, including prescribed fire, shrub planting, and timber harvest to maintain and or enhance the number and availability of habitat components, listed above. Consider the needs of the gray wolf and other endangered species in authorizing habitat improvement projects.

3. Manage riparian areas to optimize grizzly travel security and forage production.

4. Provide for security from human conflict through year-round closures of all newly constructed roads and closures of existing roads and trails as necessary to maintain the security of the area. Monitor and manage all human activity in the area.

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* Hiding cover is defined as the amount of cover to conceal at least 90 percent of an adult grizzly bear at 200 feet.

### Wildlife and Fish (continued)

11C

1. Provide and maintain hiding cover* over at least 70 percent of the area.

11, 11B

1. While grizzly bear management and research is the primary management emphasis for this area, direction will recognize the needs of the existing gray wolf population and the potential existance of an occasional band of mountain caribou.
2. The Forest Service shall monitor gray wolf and mountain caribou population status.

### Recreation

11, 11A, 11C

1. Existing facilities will be maintained and resource damage mitigated through appropriate facility reconstruction.
2. Informational signing will be provided regarding the grizzly bear use of the area.
3. The construction of new trails or reopening of old trails will be evaluated on a case by case basis.
4. Trails may be closed if necessary to meet resource management objectives or protect the facility and/or other resources.
5. Nonmotorized recreation opportunities are provided in accordance with the Recreation Opportunity Spectrum classification of the areas.

11

1. Tuchuck and Red Meadow Campgrounds will remain open as long as no adverse effects occur to grizzly bears.

11B

1. Permit activities that do not jeopardize this area's potential for RNA designation or conflict with grizzly bear management objectives.

### Wilderness

11A

1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

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* Hiding cover is defined as the amount of cover to conceal at least 90 percent of an adult grizzly bear at 200 feet.

## Range

11, 11A

1. Domestic livestock grazing is not compatible. Grazing permits will not be issued.

2. Temporary, occasional recreational stock use may be permitted but will not exceed 1982 levels. If conflicts between grizzly bear management objectives and recreational livestock use develop, the recreational livestock use will be prohibited.

11B

1. Domestic livestock use is not permitted.

11C

1. Permitted domestic livestock use (AUM's) will not be allowed to exceed the 1981 level of permitted use. The period of use by livestock will be adjusted to be compatible with use of the area by grizzly bears or the permitted use will be phased out.

## Timber

11, 11A

1. Lands are classified as unsuitable for timber management, and timber harvest is not scheduled. Where lands are capable of good vegetative regeneration, timber harvest may occur to improve or maintain the proper relationships of cover to forage, or to provide a sustained yield of necessary grizzly bear habitat components.

11B

1. Lands are classified as unsuitable for timber management, and timber harvest is not scheduled.

11C

1. Lands are classified as suitable for timber management, and timber harvest will be scheduled; however, grizzly bear habitat needs will dictate the amount, seasonal timing of harvest, silvicultural systems, logging methods, reforestation and TSI (timber stand improvement) used.

2. The Long-Range Grizzly Bear Habitat Activity Schedule will guide timber harvest activities.

3. The seasonal timing of road construction, reconstruction and logging will be constrained as per the agreement between the Flathead and Lolo National Forests and Plum Creek Timber Company, Inc.

4. Reforestation will be accomplished in accordance with the bear management prescription for the area.

5. Timber Stand Improvement activities will be permitted to enhance timber values and volumes provided that adequate hiding cover can be maintained.

## Water

11, 11A, 11B

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.
2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.
3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

## Visual Quality

11, 11A, 11C

1. The visual quality of this Management Area will at least meet the modification visual quality objective.

## Minerals

11, 11A, 11C

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.
2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

11, 11B

1. The Forest Service proposes to withdraw the unleased portions of this area from all forms of mineral entry for both locatable and leaseable minerals. The purpose of this withdrawal is to permit more time to study the effects of man's activities on grizzly bears. Oil and gas seismic activities will be permitted if this type of activity is compatible with bear management objectives. Seismic activities will provide more geologic data that will enable the Forest Service to do a better environmental analysis on the lease/no lease decision at the end of the 10-year period. Seismic projects will also allow the Forest Service to study the grizzly's reaction to oil and gas activities. Companies conducting seismic operations may be asked to co-sponser these grizzly studies.

**Minerals** (continued)

**11A, 11C** 1. Where oil and gas leasing decisions have already been made, recommend the Threatened and Endangered Species Stipulations and Activity Coordination Stipulation for incorporation to oil and gas leases. Some general guidelines are as follows:

- No seismic activity, new road construction, or drilling above 5,800 feet between October 1 to April 30 to protect denning grizzly bears.
- No seismic activity, new road construction, or drilling in flood plain and riparian areas during the primary bear-use periods (April 1 to July 1 and October 1 to November 30).
- In order to provide bear and wolf security areas, drilling, road construction, and other exploration activity should not occur simultaneously with timber sale activity in adjoining third order drainages.

**Lands**

11, 11A, 11C 1. Identify and attempt to acquire lands and interest in lands that provide key grizzly bear habitat components.

11, 11A, 11B 1. These Management Areas are avoidance areas for utility corridors (see Appendix J).

11C 1. These lands are not excluded from or need not be avoided by utility corridors (see Appendix J).

**Facilities**

Buildings
11, 11A, 11C 1. No permanent living facilities will be allowed. Temporary camps will be permitted outside of the April 1 to July 1 period.

Roads
11, 11A, 11C 1. Road location and design will be responsive to grizzly bear habitat management needs.

2. Generally new roads will be local, low standard roads.

11 1. Local roads may be constructed for habitat improvement purposes and will be closed to motorized public use except to allow snowmobile access during the winter.

**Facilities** (continued)

| | | |
|---|---|---|
| | 2. | Apply motorized access restrictions from April 1 to November 30 to all roads except Trail Creek and the lower portion of Thoma Creek roads to provide security for grizzly bears. Access to Frozen Lake will be from the Kootenai National Forest. |
| | 3. | The Trail Creek Road (FDR #114) will be open to public use. The traffic service level will generally be Service Level C. Spot reconstruction of the Trail Creek Road will be done only to mitigate resource damage or correct safety hazards consistent with Service Level C. |
| 11A | 1. | Local roads constructed for habitat improvement purposes will be closed year round to motorized public use. |
| | 2. | Local road maintenance will be Level 1. |
| 11B | 1. | No roads will be constructed. |
| 11C | 1. | Provide and maintain grizzly bear habitat security by road closures to maintain a maximum open road density at the 1981 level. |

**Prescribed Fire**

| | | |
|---|---|---|
| 11, 11A, 11C | 1. | Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G. |
| 11, 11A | 1. | Planned ignition prescribed fire may be used to enhance any habitat component. Prescribed fire objectives will be recommended by a wildlife biologist. |
| 11C | 1. | Only planned ignitions for prescribed fire objectives are appropriate. |

**Protection**

| | | |
|---|---|---|
| Fire Suppression 11, 11A, 11C | 1. | Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G. |
| 11, 11A, 11B | 1. | The appropriate suppression response will be compatible with designated grizzly bear habitat goals and objectives. Unplanned ignition prescribed fire procedures may be implemented on completion of site-specific plans. |
| 11C | 1. | Wildfire suppression responses of confine and contain are appropriate where compatible with grizzly bear objectives. |

## Research

11 1. A special effort will be made to conduct grizzly bear research and studies in this area. A special effort should be made to learn more about the effects of timber, mineral, and recreation activities on grizzly bear populations and their habitat.

## Schedule of Management Practices (Average Annual Amount)

| Management Practice | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| T&E Habitat Improvement | Acres | 25.0 | 25.0 |
| Clear Cut-Seed Cut | MMBF | 0.3 | 0.8 |
| | Acres | 20.0 | 50.0 |
| Salvage/Sanitation | MMBF | 0.3 | 0.3 |
| | Acres | 200.0 | 180.0 |
| Total Timber Harvest* | MMBF | 0.6 | 1.1 |
| Fuels Management | Acres | 220.0 | 230.0 |
| Silviculture/Stand Exams | Acres | 650.0 | 650.0 |
| Reforestation | Acres | 20.0 | 50.0 |
| Timber Stand Improvement | Acres | 15.0 | 15.0 |
| Road Construction | Miles | 1.3 | 1.0 |
| Road Reconstruction | Miles | 0.8 | 0.8 |

* The Proposed 10-year timber sale offerings schedule is presented in Appendix M.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 4, 5, 8, 10, 13, 14, 16-25, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

# MANAGEMENT AREAS 12, 12A

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**DESCRIPTION**

Management Area 12 (45,401 acres*) includes riparian areas consisting of aquatic, riparian, and a portion of terrestrial ecosystems along most perennial streams, lakes, ponds, marshlands, bogs and some important seasonal flow streams.

Riparian management areas extend a variable distance from the bankfull edge (2 year flood height). Riparian management areas along streams vary as displayed in Figures III-1 and III-2, and as follows:

1) **steep sideslopes** (40% +) - average approximately 200 feet wide (generally 100 feet each side of stream),
2) **moderate sideslopes** (20-40%) - average 400 feet wide, (generally 200 feet each side of stream),
3) and **gentle sideslopes** (0-20%) - average 600 feet wide (generally 300 feet each side of stream).

The Geographic Unit maps in Chapter IV and the Management Area map shows only these delineations that were made for the larger river flood plains, wetlands or poorly drained lacustrine landtypes. The smaller riparian management areas along streams are not shown on the map.**

Management Area 12 generally excludes those lower order streams with typically a seasonal flow, a high gradient, narrow riparian zones, and no resident fish populations. These excluded streams usually are managed as MA 17. Management Area 12 also excludes isolated seeps, springs and seasonally wet areas not contiguous with other areas meeting the description of MA 12. Riparian values for these excluded areas will be managed by following the Best Management Practices under Water in Chapter II.

Management Area 12A (120 acres) consists of land suited to riparian wildlife management and recommended as a candidate RNA (Research Natural Area). The area is located south of Swan Lake and is generally called the "Swan River Island."

**GOALS**
12

Manage riparian areas throughout the Forest to enhance vegetation and wildlife diversity and maintain or enhance water quality and fisheries. Emphasize water and soil protection and old growth habitat. Management of other resources must be compatible with the riparian habitat management standards. All riparian areas should be mapped and defined in permanent stand records during the first planning decade.

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* Includes proposed wilderness acres.

** Project level analysis and mapping will determine the long term Management Area 12 boundary for each drainage.

# *Riparian Areas*

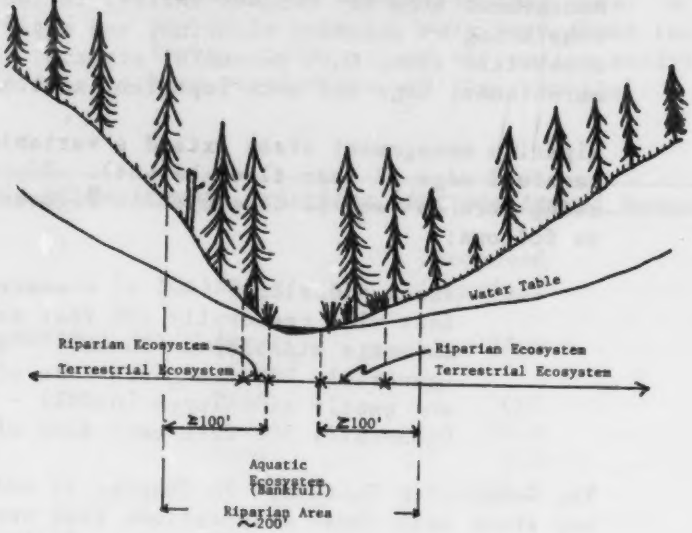
Water Table
Riparian Ecosystem
Terrestrial Ecosystem
Riparian Ecosystem
Terrestrial Ecosystem
≥100'
≥100'
Aquatic Ecosystem (Bankfull)
Riparian Area
~200'

**Figure III-1. Riparian area along a typical, small, high gradient, perennial stream with steep sideslopes.**

Flathead National Forest

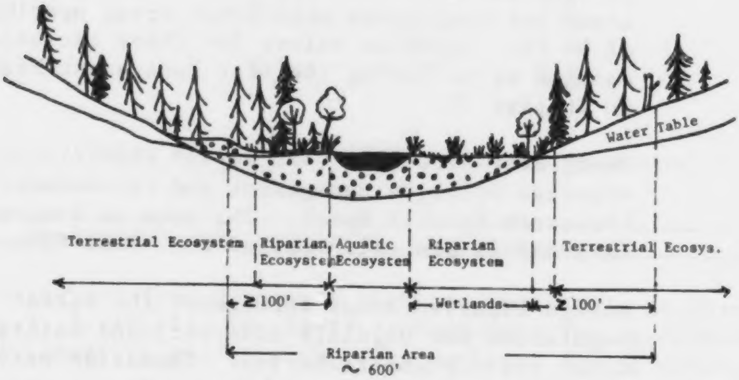
Water Table
Terrestrial Ecosystem
Riparian Ecosystem
Aquatic Ecosystem
Riparian Ecosystem
Terrestrial Ecosys.
≥ 100'
Wetlands
≥ 100'
Riparian Area
~ 600'

**Figure III-2. Riparian area along a typical, large, low gradient, perennial stream with wide floodplain and gentle sideslopes.**

Flathead National Forest

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 47 acres.

12A If the Forest's recommendation for RNA designation is approved, this area will be managed as a Research Natural Area, allowing natural vegetative changes to occur with minimum interference. If not approved, management of the area will be guided by the direction provided for Management Area 12.

**STANDARDS** In addition to the Forest-wide Management direction included in Chapter II of this Plan, the following Standards will apply to this Management Area:

The specific management direction for research natural areas, including research activities, will be incorporated as Forest Plan amendments upon establishment of the RNA.

A riparian area analysis will be part of the project analysis. This will be done on each riparian ecosystem to define its physical limits and current conditions and to specify the desired future conditions necessary to support any proposed management actions in this Management Area.

## Wildlife and Fish

12

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.
2. Management of riparian areas must be coordinated with the management of adjacent areas to ensure the protection of T&E species.
3. Ensure proper distribution and quantity of old-growth habitat for each watershed.
4. Maintain the number and distribution of snags to achieve 100 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 225 snags/100 acres, composed of:

   14 snags greater than 20 " d.b.h.
   136 snags greater than 12 " and up to 20" d.b.h.
   75 snags greater than 10 " and up to 12" d.b.h.

   Consideration will be given to location and availability of snags in adjacent Management Areas.

**Wildlife and Fish** (continued)

5. Thermal and hiding cover will be provided by old growth. The continued maintenance of these cover types will facilitate use of the riparian areas as travel corridors.

6. Openings made for the purpose of maintaining seral tree species will generally be less than 2 acres.

7. Maintain adequate tree and shrub vegetation to provide bank and instream thermal cover unless project analysis indicates a need to reduce cover to meet fish or wildlife habitat objectives. Instream cover is necessary to ensure hiding and resting areas for fish and development sites for fish-food organisms.

8. Sufficient trees will be maintained within 30 feet of the streams to provide snag recruitment to create pools and enhance spawning gravels for fish habitat.

9. Encourage research to determine habitat improvement needs.

10. If wildlife funds are not available, in sale areas K-V funds may be used if available to accomplish mitigating projects. Activities include:
    - a. Opening selected debris jams to provide fish passage.
    - b. Replacing culverts to provide fish passage or providing passage through existing culverts.
    - c. Removing selected debris from stream channels.
    - d. Revegetating exposed soils which could place sediments in streams.
    - e. Make use of habitat improvement techniques where the potential for enhancement exists.

11. Down woody material will be maintained within the riparian area (not in the stream) to the level indicated in the Forest-wide standards (10-15 tons/acre and in material greater than 6-10" diameter).

12. Maintain minimum streamflow needed to sustain the biological community.

## Recreation

12

1. Generally, trails will not be constructed in riparian areas except as needed to cross the area.
2. Existing trails should be relocated outside of riparian areas if there are erosion problems that can not be mitigated.
3. Off-road vehicle use, except by snowmobiles, is generally incompatible except on roads or trails.
4. Carefully evaluate any new developed recreation proposals to ensure the riparian area is protected.

## Timber

12

1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.
2. Harvest timber only if riparian wildlife and fish habitat values can be maintained or improved. When applied, silvicultural systems should be uneven-aged (single tree selection or group tree selection). Groups should be no larger than 2 acres in size. Cone collections and tree improvement projects are also possible.
3. Active sales will be inspected as often as needed to ensure protection of the riparian resource.
4. Vegetative diversity is an inherent characteristic of the riparian area and should be achieved through management that favors tree species, age, and size variation. This management will aid in ensuring that the range of possible habitats is provided.
5. Present and future needs for snags and down woody material must be assured before salvage logging or firewood cutting will be permitted.
6. To protect the riparian areas and water quality exercise caution when using yarding and roadbuilding equipment in the following Sediment Caution Zones:

   a. within 700 feet of streams on 60% + slopes,
   b. within 350 feet of streams on 40-60% slopes,
   c. within 225 feet of streams on 20-40% slopes,
   d. and within 300 feet of streams on 0-20% slopes.

   (Also refer to Figure II-1 on page II-43.)

**Timber** (continued)

These Caution Zones may overlap between the riparian area and adjacent Management Areas.

12A 1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

**Visual Quality**

12 1. Partial retention will be the minimum visual quality objective. Because of the limited size of this Management Area, the overall VQO for a drainage will be largely determined by the adjacent Management Area.

**Range**

12 1. If a conflict occurs between riparian values and livestock use, it must be resolved by permittee action and cooperation. If the conflict cannot be resolved or mitigated, livestock numbers will be reduced or allotment closed. Range improvements may be constructed for resource protection and to mitigate major conflicts with adjacent private or public interest.

**Soil**

12 1. Protect soil productivity.

2. Provide soil technical support (inventory and interpretation) for environmental assessments, project fires, and implementation of landtype standards and guidelines.

3. Soil surveys will be to an Order II level of detail.

**Water**

12, 12A 1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

## Minerals

12, 12A

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary, for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

12A

3. Plans or permits related to minerals activities will be approved only if such activities would not jeopardize the area's potential for RNA designation.

## Facilities

Roads
12

1. New roads will not be constructed in riparian management areas except as needed to cross the area. New roads which must cross riparian areas will do so with as little impact to the stream or lake as is reasonable and generally should not parallel streams within the Sediment Caution Zone.

2. New roads will generally not be built within one-half mile of lakes.

3. Stream crossings will be individually evaluated to ensure fish passage.

4. Installation of bridges and culverts within the riparian area will be coordinated with the Montana Department of Fish, Wildlife, and Parks. Roadbuilding and timber harvest machinery will be restricted from stream channels, immediate banks and wet sites to protect water quality. Fish movement will not be restricted. This will be accomplished by managing instream debris and by assuring fish passage, where needed, through culverts and bridges. In-channel projects, (building bridges or culverts) will generally be scheduled for periods when trout eggs and fry are not in the gravels. Each site will be considered on an individual basis.

5. Specifically designed and built structures will be required on each stream crossing. Disturbed surfaces will be stabilized after a structure is built at each stream crossing.

## Facilities (continued)

6. Where possible, stream channels will be dewatered, at the site, during major bridge and culvert installations. Other measures such as coffer dams, settling basins, and filters should be considered for inclusion in construction contracts. Each site will be considered on a case-by-case basis.

7. Active construction projects in riparian areas should be inspected as often as needed to ensure protection of the riparian resource.

8. Road closures will be implemented as necessary to protect riparian wildlife and fish habitat values, to be compatible with the adjacent Management Area direction, to protect other resources, or to ensure public safety.

9. Special-use applications will be considered individually and special stipulations attached for design and construction of any facilities. Generally occupancy in the riparian area will not be permitted if there are reasonable alternatives.

## Wilderness

12

1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

## Prescribed Fire

12

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. Prescribed fire can be used to reduce hazards and provide site preparation if compatible with riparian objectives.

## Protection

Fire Suppression
12, 12A

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. Wildfire originating in this area will be controlled. District Ranger approval is required to implement suppressive tactics which involve application of aerial retardant or mechanical soil displacement.

12A

1. Control is usually the only appropriate suppression response until replaced by RNA management direction.

**Protection** (continued)

| | | |
|---|---|---|
| Insect and Disease 12, 12A | 1. | Pesticides will not be used in riparian areas. |

**Lands**

| | | |
|---|---|---|
| 12 | 1. | These lands are not excluded from or need not be avoided by utility corridors (see Appendix J). |
| 12A | 1. | this Management Area is an avoidance area for utility corridors (see Appendix J). |

## Schedule of Management Practices (Average Annual Amount)

| Management Practice | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Trail Construction/ Reconstruction | Miles | 0.2 | 0.2 |
| Soil & Water Improvement | Acres | 82.0 | 82.0 |
| Fish Habitat Improvement | Acres | 71.0 | 71.0 |
| Wildlife Habitat Improvement | Acres | 78.0 | 78.0 |
| Road Construction | Miles | 0.6 | 0.2 |
| Road Recontruction | Miles | 1.1 | 1.1 |
| Range Improvement | Acres | 25.0 | 25.0 |

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 4, 5, 8, 10, 13-28, 30, 38-41, 45, and 47-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

# MANAGEMENT AREAS 13, 13A, 13B, 13C, 13D

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**DESCRIPTION**

The following Management Areas consist of roaded and unroaded lands capable of providing mule deer and elk winter habitat.

Management Area 13 (27,202 acres*) consists of timberlands capable of providing mule deer and elk winter habitat.

Management Area 13A (13,176 acres) consists of nonforest lands capable of providing mule deer and elk winter habitat.

Management Area 13B (142 acres) consists of timber and nonforest lands capable of providing mule deer and elk winter habitat and recommended as a candidate RNA (Research Natural Area). It is located along the Little Bitterroot River of the Swan Lake Ranger District.

Management Area 13C (738 acres) consists of timberlands capable of providing mule deer and elk winter habitat located in the Noisy Face Geographic Unit. These lands have high scenic value due to the visual importance of this area to communities in the Flathead Valley.

Management Area 13D (5,662 acres) consists of timber and nonforest lands capable of providing mule deer and elk winter habitat located along the west face of Columbia Mountain. These lands have high scenic value due to the visual importance of this area to the communities in the Flathead Valley.

**GOALS**

13 thru 13D

Provide the size, age, diversity, and distribution of habitat units (both cover and forage) suitable for mule deer and elk winter habitat.

Management of other resources will generally be compatible with the mule deer and elk winter habitat management goals. All summer recreation activities in a roaded natural-appearing environment are compatible. Winter recreation activities will not be encouraged and may be restricted if conflicts between recreationists and mule deer and elk management occur.

Timber harvest can be used to improve or maintain the relationships of cover to forage. Prescribed burning is also an acceptable habitat improvement method.

13

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 212 acres.

---

* Includes proposed wilderness acres.

**GOALS (continued)**

**13B** — **If the Forest's recommendation for RNA designation is approved, this area will be managed as a Research Natural Area, allowing natural vegetative changes to occur with minimum interference. If not approved, management of the area will be guided by the direction provided for Management Area 13A.**

**13C, 13D** — **Manage for mule deer and elk winter habitat and maintain a landscape in which management activities are not dominant.**

**STANDARDS**

**In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following Standards will apply to this Management Area:**

**The specific management direction for Research Natural Areas, including research activities will be incorporated as Forest Plan amendments upon establishment of the RNA.**

### Wildlife and Fish

13, 13A

1. Complete a Long-Range Mule Deer and Elk Winter Range Activity Schedule for each winter range unit. Utilize this schedule to guide project planning.

2. Implement the full range of wildlife habitat improvements.

3. Consider those portions of this Management Area separated by one-half mile or more as separate winter ranges.

4. To be acceptable habitat, each separate winter range area must have 30 percent of the area in winter thermal cover (Thermal cover is defined as the point in the growth of a stand of evergreen coniferous trees when it has a minimum average height of 60 feet and has a minimum crown canopy of 70 percent).

5. Adhere to the Forest-wide Standards for Grizzly Bear management in occupied Grizzly Bear habitat.

6. Maintain the number and distribution of snags to provide for at least 80 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 180 snags/100 acres composed of:

   11 snags greater than 20" d.b.h.
   109 snags greater than 12" and up to 20" d.b.h.
   60 snags greater than 10" and up to 12" d.b.h.

   Consideration will be given to location and availability of snags in adjacent Management Areas.

**Wildlife and Fish** (continued)

13C, 13D 7. Implement those wildlife habitat improvements that are consistent with the visual quality objective.

**Visual Quality**

13, 13A 1. The VQO (Visual Quality Objective) will generally be modification.

13C, 13D 2. The visual quality of these Management Area's will meet a partial retention visual quality objective.

**Recreation**

Trails
13, 13A, 13C 1. Maintenance or construction of hiking trails is compatible, but ski trails will be evalueated on a case-by-case basis. Trail closures may be implemented to meet management area objectives.

13B 2. Permit activities that do not jeopardize this area's potential for RNA designation.

**Wilderness**

13 1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

**Water**

13, 13A, 13C, 13D 1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

**Range**

13, 13A, 13C, 13D 1. Existing domestic livestock use will be permitted to continue; however, adjustments in AUM's may be made to ensure compatibility with mule deer and elk winter range management goals.

### Range (continued)

13B 2. Domestic livestock use will not be permitted.

### Timber

13, 13C 1. Lands are classified as suitable for timber management, and timber harvest will be scheduled.

2. The scheduling of timber harvests designed to provide mule deer and elk winter habitat will be specified by the Long-Range Mule Deer and Elk Winter Range Activity Schedule.

3. Timber stand improvement projects will be designed to meet winter range objectives.

13A, 13B, 13D 1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

### Minerals

13, 13A, 13C, 13D 1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operations.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

13B 1. Plans or permits related to minerals activities will be approved only if such activities would not jeopardize the area's potential for RNA designation.

### Lands

13, 13A, 13C, 13D 1. Special uses, land exchanges, and rights-of-way proposals will be carefully reviewed to ensure maintenance and enhancement of mule deer and elk winter habitat. The goal is to maintain the quantity or quality of winter habitat through the landownership adjustment program.

2. These lands are not excluded from or need not be avoided by utility corridors (see Appendix J).

13B 1. this Management Area is an avoidance area for utility corridors (see Appendix J).

## Facilities

| | | |
|---|---|---|
| Roads<br>13, 13A, 13C, 13D | 1. | Roads will be closed to motorized vehicles December 1 to May 15 if necessary to provide mule deer and elk undisturbed use of winter range. |
| | 2. | Additional road closures may be implemented to meet adjacent Management Area objectives and/or to protect resources or the facility. |
| | 3. | Road construction and reconstruction activities will be restricted if adverse impacts occur to mule deer and elk. |
| 13, 13A | 1. | In the Emery Creek Geographic Unit, apply motorized access restrictions from December 1 to July 1 as necessary to provide mule deer and elk undisturbed use of winter range and calving areas. |

## Prescribed Fire

| | | |
|---|---|---|
| 13, 13A, 13C, 13D | 1. | Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G. |
| 13A | 1. | Cost-effective application of prescribed fire should be planned on a periodic basis that maintains and enhances habitat components. |

## Protection

| | | |
|---|---|---|
| Fire Suppression<br>13, 13A, 13C, 13D | 1. | Follow Forest-wide standards for fire management and refer to the Fire Management Direction in Appendix G. |
| | 2. | The appropriate suppression response will be compatible with the goals of mule deer and elk winter habitat management. |
| 13B | 1. | Control is usually the only appropriate suppression response until replaced by RNA management direction. |

## Schedule of Management Practices (Average Annual Amount)

| Management Practice | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Soil & Water Improvement | Acres | 8.0 | 8.0 |
| Wildlife Habitat Improvement | Acres | 45.0 | 61.0 |
| T & E Habitat Improvement | Acres | 90.0 | 90.0 |
| Clear Cut-Seed Cut | MMBF | 5.5 | 4.4 |
|  | Acres | 370.0 | 296.0 |
| Shelterwood-Removal Cut | MMBF | 0.8 | 0.0 |
|  | Acres | 50.0 | 0.0 |
| Salvage/Sanitation | MMBF | 0.5 | 0.3 |
|  | Acres | 350.0 | 200.0 |
| Total Timber Harvest* | MMBF | 6.8 | 4.7 |
| Fuels Management | Acres | 770.0 | 496.0 |
| Silviculture/Stand Exams | Acres | 2,135.0 | 2,135.0 |
| Reforestation | Acres | 420.0 | 296.0 |
| Timber Stand Improvement | Acres | 400.0 | 400.0 |
| Road Construction | Miles | 3.5 | 2.5 |
| Road Reconstruction | Miles | 1.1 | 1.1 |
| Range Improvement | Acres | 5.0 | 5.0 |

* The proposed 10-year timber sale offerings schedule is presented in Appendix M.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 4, 5, 8, 10-14, 16-25, 30, 31, 41, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

## MANAGEMENT AREA 14

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### DESCRIPTION

Management Area 14 (8,020 acres) consists of land designated as the Coram Experimental Forest by the Chief of the Forest Service in 1933. It is within the boundaries of the Hungry Horse Ranger District. The Experimental Forest is managed under Supplement No. 2, Memorandum of Understanding, dated April 1, 1983, with the Intermountain Forest and Range Experiment Station. It contains an 839-acre Research Natural Area. Coram is also closed as a Biosphere Reserve within the UNESCO Man and Biosphere Program to increase its usefulness to man's understanding of the environment.

### GOAL

Continue management within the framework of the Memorandum of Understanding which emphasizes research to provide ecological and silvicultural information needed to manage western larch forests. The Hungry Horse Ranger District Ranger is responsible for carrying out the terms of the agreement. The Director of Intermountain Forest and Range Experiment Station is responsible for all research activities on the Experimental Forest.

The Research Natural Area will be managed as such with public use discouraged, no transportation system and no forest products removed.

### STANDARDS

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following Standards will apply to this Management Area:

#### Recreation

1. Do not permit permanent recreation improvements unless for research.
2. Do not permit overnight camping.
3. Recreation activities such as fishing, berrypicking, and picnicking are permitted.

#### Visual Quality

1. No visual quality objectives are established for this area.

#### Wildlife and Fish

1. Research activities will consider improving wildlife and fish habitat to meet research objectives.
2. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

## Range

1. No domestic livestock or transportation stock grazing will be allowed.

## Timber

1. Research on all timber management activities is appropriate. The station researchers are responsible for planning activities and the Hungry Horse District Ranger is responsible for sale preparation and administration.

2. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

## Water

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

## Facilities

1. Roads will be closed as necessary to protect ongoing research and studies.

## Minerals

1. The Experimental Forest is withdrawn from mineral development under the mining laws but not from leasing under the mineral leasing laws.

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special

### Minerals (continued)

stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

### Prescribed Fire

1. Prescribed fire may be used in support of research activities.

### Protection

Fire Suppression 1. The objective of fire suppression will be prompt cost effective control of all wildfires.

### Lands

1. this Management Area is an avoidance area for utility corridors (see Appendix J).

## Schedule of Management Practices (Average Annual Amount)

No Management Practices are scheduled.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 8, 10, 13, 14, 16-25, 38, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

## MANAGEMENT AREAS 15, 15A, 15B, 15C, 15D, 15E

**DESCRIPTION**

The following Management Areas consist of roaded timberlands located throughout the Flathead National Forest.

Management Area 15 (492,704 acres*) consists of timberlands where timber management with roads is economical and feasible.

Management Area 15A (11,456 acres*) consists of timberlands where timber management with roads is economical and feasible, but special considerations must be made for sensitive soils. These lands are in the Skyland/Puzzle Creek area of the Hungry Horse Ranger District.

Management Area 15B (2,054 acres) consists of timberlands where timber management with roads is economical and feasible, but special consideration must be made for the cross-country skiing use of the area. These lands are located near Essex on the Hungry Horse Ranger District and in Round Meadows on the Tally Lake Ranger District.

Management Area 15C (8,166 acres) consists of timberlands where timber management with roads is economical and feasible, and are key whitetailed deer summer range. These areas are located immediately north and east of Lindbergh Lake on Swan Lake Ranger District.

Management Area 15D (1,999 acres) consists of timberlands where timber management with roads is economical and feasible, but visual sensitivity must also be considered. These lands are located in the Island Geographic Unit on Swan Lake Ranger District and can readily be seen from Lake Mary Ronan.

Management Area 15E (8,900 acres) consists of timberlands where timber management with roads is economical and feasible, and are adjacent to key mule deer and elk winter range habitat Management Areas (MA 13). These areas are located in the Spotted Bear River drainage.

GOALS
15 thru 15E

Emphasize cost-efficient production of timber while protecting the productive capacity of the land and timber resource.

Other resources will be managed in a manner consistent with the timber management goals. The visual landscape may be altered. Roaded natural-appearing recreation opportunities environment will be provided.

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* Includes proposed wilderness acres.

GOALS (continued)

15 In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 983 acres.

15A Mitigation measures will be incorporated to protect sensitive soils.

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 388 acres.

15B Special consideration will be given to the cross-country skiing recreational use of the area.

15C Special consideration will be given to the whitetailed deer summer range within this Management Area.

15D Special consideration will be given to visual management.

15E Special consideration will be given to the seasonal habitat requirements of elk within these units and the contiguous winter ranges.

STANDARDS In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:

Timber

15 thru 15E

1. Lands are classified as suitable for timber management, and timber harvest will be scheduled.

2. Maintain or create diverse patterns of vegetation, using primarily even-aged silvicultural systems. Include precommercial thinning and intermediate harvest for stocking and species composition control. A variety of special wood products will also be made available through salvage sales, small sales, and permits, and the incidental unscheduled volume associated with large sales.

3. As directed by the Northern Regional Guide, generally keep timber harvest units to 40 acres in size or less. Due to existing timber stand distribution, each Ranger District will find it necessary to annually exceed the size of opening limits defined by the Regional Guides on a few timber harvest units. Standard In-Service review, approval or denial, and public notification procedures will be followed.

### Timber (continued)

4. Use timber stand improvement practices to maintain horizontal stand diversity.

5. Project design will determine the most cost-efficient action that protects the productive capacity of the area and meets Management Area objectives. Decisions should consider all treatments needed over a timber rotation.

15B

1. Design timber sales to be consistent with cross-country ski activities.

2. Do not allow winter logging at Essex in recognition of the cross-country skiing recreational use.

### Wilderness

15, 15A

1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

### Recreation

15 thru 15E

1. Trail maintenance and construction are compatible so long as the timber management objectives are met.

### Visual Quality

15 thru 15C, 15E

1. The VQO (Visual Quality Objective) will generally be modification or maximum modification.

15D

1. Modification visual quality objectives will generally be met unless more restrictive VQO's can be achieved without significantly increasing costs or reducing timber volume and future management options.

### Wildlife and Fish

15 thru 15E

1. Adhere to the Forest-wide Standards for Grizzly Bear management in occupied Grizzly Bear habitat.

2. When consistent with this Management Area's goals, and where appropriate, the number and distribution of snags for at least 40 percent of the maximum potential population of snag cavity dependent species will be maintained. Manage for a minimum 90 snags/100 acres composed of:

5 snags greater than 20" d.b.h.
55 snags greater than 12" and up to 20" d.b.h.
30 snags greater than 10" and up to 12" d.b.h.

**Wildlife and Fish** (continued)

Consideration will be given to location and availability of snags in adjacent Management Areas.

15C 1. Maintain whitetailed deer summer range habitat units (cover/forage areas) at 20 acres or less.

2. Maintain average unrestricted road densities of less than 1.8 miles per section.

3. Manage to provide vegetation manipulation that maintains or enhances whitetailed deer summer habitat condition while emphasizing timber management.

15E 1. Manage to provide vegetation that maintains the variety of habitat requirements compatable with adjacent Management Area 13.

2. Be aware of the early spring and late winter security requirements of elk in this Mangement Area.

**Range**

15C 1. Domestic livestock grazing is compatible to the extent that the pothole environment, an important whitetailed deer summer habitat component, can be protected.

**Water**

15 thru 15E 1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

**Minerals**

15 thru 15E 1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

### Minerals (continued)

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

### Facilities

15

1. In Upper Porcupine and Whitetail drainages restrict motorized road access as necessary to provide for elk summer habitat.

15C

1. To allow whitetailed deer optimum dispersal and use of summer range, apply motorized road access restrictions to local roads; however, snowmobile use is permitted.

### Soils

15A

1. Provide special protection measures for the sensitive soils in the Skyland/Puzzle Creek area.

### Prescribed Fire

15 thru 15E

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. Planned ignition prescribed fire may be utilized to reduce hazards from activity caused fuel concentrations and to maintain or enhance vegetative components or wildlife habitat. Hazard reduction and site preparation broadcast burning units should be designed to reduce risk of escape and associated costs.

### Protection

Fire Suppression
15 thru 15E

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. The appropriate suppression response will be compatible with the resource goals of this Management Area. The contain and confine response options may be utilized on an economic basis only during pre or post-season conditions.

15A

1. District Ranger approval is required for heavy equipment use in any suppression action, and potential rehabilitation needs will be evaluated.

**Lands**

15 thru 15E  1. These lands are not excluded from or need not be avoided by utility corridors (see Appendix J).

## Schedule of Management Practices (Average Annual Amount)

| Management Practices | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Trail Construction/ Reconstruction | Miles | 0.2 | 0.2 |
| Soil & Water Improvement | Acres | 40.0 | 40.0 |
| Wildlife Habitat Improvement | Acres | 46.0 | 46.0 |
| Clear Cut-Seed Cut | MMBF | 81.5 | 89.1 |
|  | Acres | 5,576.0 | 5,066.0 |
| Shelterwood-Removal Cut | MMBF | 1.0 | 1.8 |
|  | Acres | 180.0 | 347.0 |
| Salvage/Sanitation | MMBF | 2.7 | 1.4 |
|  | Acres | 1,144.0 | 1,020.0 |
| Total Timber Harvest* | MMBF | 85.2 | 92.3 |
| Fuels Management | Acres | 6,900.0 | 6,433.0 |
| Silviculture/Stand Exams | Acres | 51,000.0 | 51,000.0 |
| Reforestation | Acres | 5,756.0 | 4,903.0 |
| Timber Stand Improvement | Acres | 2,170.0 | 2,170.0 |
| Road Construction | Miles | 40.0 | 29.0 |
| Road Reconstruction | Miles | 13.0 | 13.0 |
| Range Improvement | Acres | 300.0 | 300.0 |

* The proposed 10-year timber sale offerings schedule is presented in Appendix M.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 4, 5, 8, 10, 13, 14, 16-25, 30, 31, 41, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

# MANAGEMENT AREAS 16, 16A, 16B, 16C

**DESCRIPTION**

The following Management Areas consist of unroaded timberlands throughout the Flathead National Forest.

Management Area 16 (17,767 acres*) consists of timberlands where timber management is feasible through the use of aerial logging systems. The lands are generally steep breaklands where roading may be economically prohibitive or environmentally unsound.

Management Area 16A (1,722 acres) consists of timberlands where timber management is feasible through the use of aerial logging systems with special consideration for sensitive soils and watershed values. This unit consists of steep breaklands on the Hungry Horse Ranger District in the Skyland/Puzzle Creek area.

Management Area 16B (312 acres) consists of timberlands where timber management is feasible through the use of aerial logging systems with consideration for high recreation values and winter cross-country ski use. This unit consists of steep breaklands on the Hungry Horse District near Essex.

Management Area 16C (443 acres) consists of timberlands where timber management is feasible through the use of aerial logging systems, that are adjacent to key mule deer and elk winter range habitat Management Areas (MA 13). These areas are located in the Spotted Bear River drainage.

GOALS

16 thru 16C

Emphasize cost-efficient production of timber while protecting the productive capacity of the land and timber resource. Roadless logging methods will be used, unless site specific analysis determines that a roaded system is economically and environmentally prudent.

Other resources will be managed in a manner consistent with the timber management goals. The visual landscape may be altered. Dispersed recreation opportunities in an unroaded environment will be provided.

16

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 678 acres.

16A

Mitigation measures will be incorporated to protect the sensitive soils.

16B

Special consideration will be given to the recreational values of the area.

---

* Includes proposed wilderness acres.

**GOALS** (continued)

16C Special consideration will be given to the seasonal habitat requirements of elk within these units.

**STANDARDS** In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following Standards will apply to this Management Area:

### Timber

16 thru 16C

1. Lands are classified as suitable for timber management, and timber harvest will be scheduled.
2. Use primarily even-aged regeneration harvests emphasizing natural regeneration with no species or stocking control (i.e., thinning and weeding) unless it is cost effective to do so.
3. On the ground investigation and site specific economic analysis for a specific project will determine whether timber harvesting will utilize roaded or unroaded systems.
4. Generally, as directed by the Northern Regional Guide, keep timber harvest units to 40 acres in size or less. Due to existing timber stand distribution and topographic features, it may be necessary to exceed the size of opening limits defined by the Northern Regional Guide on a few timber harvest units annually. Standard In-Service review, approval or denial, and public notification procedures will be followed.
5. Natural regeneration will be emphasized. Artificial reforestation will be used if necessary to meet tree-stocking objectives within 5 years of site preparation.

16B

1. In recognition of the cross-country skiing recreational use at Essex, do not allow winter logging.
2. Design timber sales to be consistent with cross-country ski activities.

16C

1. Timber sale design will recognize the specific elk habitat component possessed by those units and it's contributary value to adjacent Management Areas.

## Wilderness

16 1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

## Recreation

16 thru 16C 1. Trail maintenance and construction are compatible as long as the timber management objectives are met.

## Visual Quality

16 thru 16C 1. The visual quality objective will generally be modification or maximum modification.

## Wildlife and Fish

16 thru 16C 1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

2. When consistant with this Management Area's goals, and where appropriate, the number and distribution of snags for at least 40 percent of the maximum potential population of snag cavity dependent species will be maintained. Manage for a minimum 90 snags/100 acres composed of:

5 snags greater than 20" d.b.h.
55 snags greater than 12" and up to 20" d.b.h.
30 snags greater than 10" and up to 12" d.b.h.

Consideration will be given to location and availability of snags in adjacent Management Areas.

16C 1. Project proposals will be analyzed to determine the specific elk habitat component possessed by the unit, and timber harvest plans will recognize these values in sale design.

## Range

16 thru 16C 1. These management areas are not suitable for permitted grazing by domestic livestock. Incidental and permitted recreational stock grazing is compatible.

## Water

16 thru 16C 1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

### Water (continued)

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

### Minerals

16 thru 16C

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

### Soils

16A

1. Detailed soil map, evaluation, and recommended protection measures will be required for project design.

### Facilities

16 thru 16C

1. Roads will generally not be constructed for surface land management activities except for temporary minimum support facilities for aerial harvest systems.

### Prescribed Fire

16 thru 16C

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. Planned ignition prescribed fire may be utilized to reduce hazards from activity fuel concentrations and maintain or enhance vegetative components or wildlife habitat. Hazard reduction and site preparation broadcast burning units should be designed to reduce risk of escape and associated costs.

## Protection

| | | |
|---|---|---|
| Fire Suppression 16 thru 16C | 1. | Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G. |
| | 2. | The appropriate suppression response will be compatible with the resource goals of this Management Area. The contain and confine response options may be utilized on an economic basis only during pre- or post-season conditions. |
| | 3. | District Ranger approval is required for heavy equipment use in any suppression action, and potential rehabilitation needs will be evaluated. |

## Lands

| | | |
|---|---|---|
| 16 thru 16C | 1. | These lands are not excluded from or need not be avoided by utility corridors (see Corridor Planning, Appendix J). |

## Schedule of Management Practices (Average Annual Amount)

| Management Practices | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| T&E Habitat Improvement | Acres | 13.0 | 13.0 |
| Clear Cut-Seed Cut | MMBF | 0.6 | 0.6 |
| | Acres | 40.0 | 41.0 |
| Shelterwood-Removal Cut | MMBF | 0.2 | 0.3 |
| | Acres | 30.0 | 48.0 |
| Total Timber Harvest* | MMBF | 0.8 | 0.9 |
| Fuels Management | Acres | 70.0 | 89.0 |
| Silviculture/Stand Exams | Acres | 1,965.0 | 1,965.0 |
| Reforestation | Acres | 70.0 | 89.0 |

* The proposed 10-year timber sale offerings schedule is presented in Appendix M.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to these Management Areas are: 1, 2, 4, 5, 8, 10, 13, 14, 16-25, 30, 31, 41, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

# MANAGEMENT AREA 17

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## DESCRIPTION

Management Area 17 (10,705 acres) includes riparian areas consisting of aquatic, riparian, and a portion of terrestrial ecosystems along perennial stream reaches, and some important streams with typically a seasonal flow. They are generally too narrow in width to manage as separate units. Due to their limited size and width, management must be closely coordinated with management of the adjoining area.

Management Area 17 stream reaches are shown on the management area map.* Riparian areas extend a variable distance from the bankfull edge (2 year flood height). Riparian management areas along streams vary as displayed in Figures III-1 and III-2, and as follows:

1) steep sideslopes (40% +) - average approximately 200 feet wide (generally 100 feet each side of stream),
2) moderate sideslopes (20-40%) - average 400 feet wide (generally 200 feet each side of stream),
3) and gentle sideslopes (0-20%) - average 600 feet wide (generally 300 feet each side of stream).

## GOALS

Protect and maintain this riparian zone throughout the Forest, including fish and wildlife habitat, while maintaining a sustained yield of timber. Timber harvest will be used to maintain age class diversity of overstory vegetation and enhance riparian values. All riparian areas should be mapped and defined in permanent stand records during the first planning decade.

## STANDARDS

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to these Management Areas:

A riparian area analysis will be made before a major project is implemented on the ground. This analysis may be done separately or as part of the project planning. This will be done on each riparian ecosystem to define its physical limits and current conditions and to specify the desired future conditions necessary to support any proposed management actions in this Management Area.

### Timber

1. Lands are classified as suitable for timber management, and timber harvest will be scheduled. Yields will be less than the biological timber potential due to long rotations.

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* Project analysis and mapping will determine the long term management area boundary for to each drainage.

# *Riparian Areas*

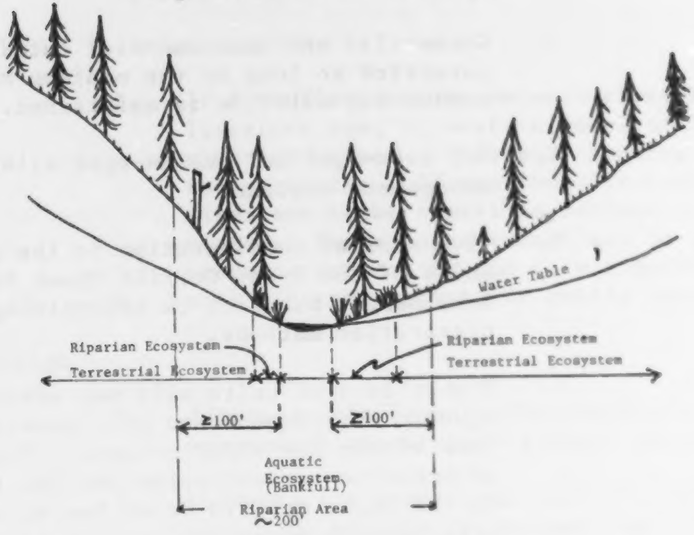
Water Table
Riparian Ecosystem
Terrestrial Ecosystem
Riparian Ecosystem
Terrestrial Ecosystem
≥100'
≥100'
Aquatic Ecosystem (Bankfull)
Riparian Area
~200'

**Figure III-1. Riparian area along a typical, small, high gradient, perennial stream with steep sideslopes.**

**Flathead National Forest**

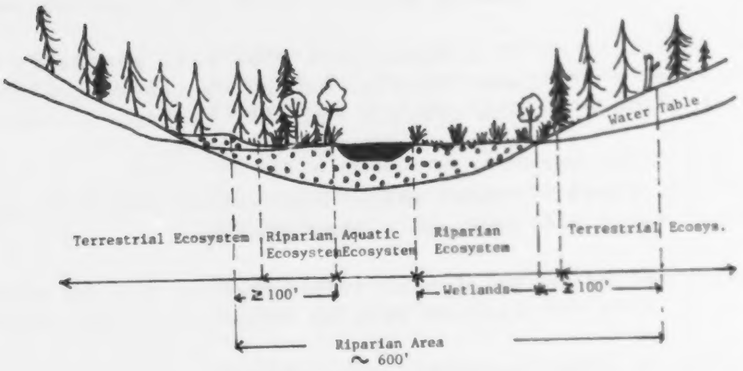
Water Table
Terrestrial Ecosystem
Riparian Ecosystem
Aquatic Ecosystem
Riparian Ecosystem
Terrestrial Ecosys.
≥ 100'
Wetlands
≥ 100'
Riparian Area
~ 600'

**Figure III-2. Riparian area along a typical, large, low gradient, perennial stream with wide floodplain and gentle sideslopes.**

**Flathead National Forest**

**Timber** (continued)

2. Generally a 200-year rotation and 20-year cutting cycle will be maintained.

3. Commercial and noncommercial cutting of firewood is permitted so long as the minimum number of hard snags needed for wildlife is maintained.

4. Use even-aged and uneven-aged silvicultural management systems.

5. Give special consideration to the poorly drained soils of the Upper Griffin Creek Basin on the Tally Lake Ranger District in determining harvest and site preparation methods.

6. Timber harvest units will not adversely affect the aquatic environment and will generally be 2 acres or less within the riparian area. These units can be adjacent to harvest units outside the riparian zone. In the Upper Griffin Creek Basin, units will be no more than 10 acres in size and no more than 25 percent of the areas will be regenerated within any 20-year period.

7. Yarding or roadbuilding equipment generally will not be permitted within 100 feet of water courses or lake edge except at designated crossings.

8. Active sales will be inspected as often as needed to ensure protection of the riparian resource.

9. This Management Area will generally be managed to meet partial retention visual quality objectives. The overall VQO will be largely determined by the adjacent Management Area.

10. Timber stand improvement practices may be used to increase timber yields.

11. Artificial reforestation will be used to achieve desired species composition and stocking levels.

12. To protect the riparian areas and water quality exercise caution when using yarding and roadbuilding equipment in the following Sediment Caution Zones:

    a. within 700 feet of streams on 60% + slopes,
    b. within 350 feet of streams on 40-60% slopes,
    c. within 225 feet of streams on 20-40% slopes,
    d. and within 300 feet of streams on 0-20% slopes.

    (Also refer to Figure II-1 on page II-43.)

Timber (continued)

These Caution Zones may overlap between the riparian area and adjacent Management Areas.

Range

1. If a conflict occurs between riparian values and livestock use, it must be resolved in favor of the riparian values. This will require coordination with the permittee. If the conflict cannot be resolved, livestock numbers will be reduced or allotment closed. Range improvements may be constructed for resource protection and to mitigate major conflicts with adjacent private or public interest.

Wildlife and Fish

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

2. Maintain the number and distribution of snags for at least 100 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 225 snags/100 acres composed of:

   14 snags greater than 20" d.b.h.
   136 snags greater than 12" up to 20" d.b.h.
   75 snags greater than 10" up to 12" d.b.h.

   Consideration will be given to location and availability of snags in adjacent Management Areas.

3. Adequate old growth trees within 30 feet of streams will be maintained to provide recruitment to the fisheries streams to create pools for fish habitat.

4. Maintain adequate tree and shrub vegetation to contribute tree cover to banks and in stream areas in order to provide favorable water temperatures.

5. Maintain desirable levels of instream large woody debris to provide fish habitat.

6. Maintain the minimum streamflow necessary to sustain the biological community in MA 17 as well as the downstream biological communities.

Soil

1. Protect soil productivity.

2. Provide soil technical support (Inventory and Interpretation) for environmental assessments,

### Soil (continued)

project fires and implementation of landtype standards and guidelines.

3. Soil surveys will be to an Order 3 level of detail.

### Water

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.
2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.
3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

### Recreation

1. Generally trails will not be constructed in riparian areas except as needed to cross the area.
2. Off-road vehicle use, except by snowmobiles, is generally incompatible except on roads or trails.
3. Recreation opportunities will be provided. Management of other resources must be compatible with the riparian timber management objectives.

### Visual Quality

1. The overall visual quality will be influenced by the adjacent Management Areas.

### Minerals

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.
2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

## Facilities

### Roads

1. Where possible, stream channels will be dewatered during major bridge and culvert installations. Measures, such as coffer dams, settling basins and filters, will be designed and specified in contracts to reduce sediment introduction to streams by construction activities.

2. Active construction projects in riparian areas will receive full inspection during activities affecting water quality.

3. Roads will cross riparian areas with as little impact to the stream as is reasonable. Roads which parallel streams generally will not be built within riparian areas.

4. Stream crossings will be individually evaluated to ensure fish passage.

5. All stream crossings will be stabilized with riprap, vegetation, road surfacing, or other appropriate measures within 1 month after fill is completed to minimize sediment production. Installation of bridges and culverts within the riparian zone will be coordinated with the Montana Department of Fish, Wildlife and Parks and scheduled for periods when trout eggs and fry are not in the gravel.

6. Road closures will be implemented as necessary to be compatible with adjacent Management Area directions and/or to prevent resource or facility damage.

7. Special use applications will be considered individually and special stipulations attached for design and construction of any facilities. Generally, occupancy in the riparian area will not be permitted if there are reasonable alternatives.

## Prescribed Fire

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.

2. Prescribed fire can be used to reduce hazards and provide site preparation when compatible with riparian objectives.

## Protection

**Fire Suppression**

1. Follow Forest-wide standards for fire management and refer to Fire Management Direction in Appendix G.
2. Wildfire originating in this area will be controlled. Line officer approval is required to implement suppression tactics which involve application of aerial retardant or mechanical soil displacement.

**Insect and Disease**

1. Pesticides will not be used in riparian areas.

## Lands

1. These lands are not excluded from or need not be avoided by utility corridors (see Appendix J).

### Schedule of Management Practices (Average Annual Amount)

| Management Practice | Unit | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Soil & Water Improvement | Acres | 8.0 | 8.0 |
| Clear Cut-Seed Cut | MMBF | 0.3 | 0.3 |
| | Acres | 20.0 | 20.0 |
| Selection | MMBF | 0.1 | 0.1 |
| | Acres | 98.0 | 100.0 |
| Salvage/Sanitation | MMBF | 0.7 | 0.6 |
| | Acres | 480.0 | 400.0 |
| Total Timber Harvest* | MMBF | 1.1 | 1.0 |
| Fuels Management | Acres | 598.0 | 520.0 |
| Silviculture/Stand Exams | Acres | 1,000.0 | 1,000.0 |
| Reforestation | Acres | 20.0 | 20.0 |
| Timber Stand Improvement | Acres | 10.0 | 10.0 |
| Road Construction | Miles | 0.1 | 0.1 |

* The proposed 10-year timber sale offerings schedule is presented in Appendix M.

### Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 4, 5, 8, 10, 13-28, 31, 41, 45, and 47-57. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

## MANAGEMENT AREA 18

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**DESCRIPTION**

Management Area 18 (13,838 acres) consists of National Forest System lands designated for wild, scenic, and recreation river management under the Wild and Scenic Rivers Act.

**GOALS**

Manage each segment of the Flathead Wild and Scenic River Unit in a manner consistent with the classification assigned to it by Public Law 94-486, the designating Act. Maintain the scenic, ecological, and recreation integrity of the resource through responsible management. Emphasize visitor contact and education. Monitoring of use to determine thresholds of adverse impacts and management of use levels within desired social and biological settings based on sound, planned research. Protect private land rights within the designated corridor.

**STANDARDS**

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:

### All Resource Elements

1. The following is a summary of the management direction for the Wild and Scenic River system on the Flathead National Forest. For more detailed management directions, refer to Appendix BB. See also the standards for Management Area 21 for management of "Wild River" segments in the Bob Marshall and Great Bear Wildernesses.

2. There is action being taken through the LAC (Limits of Acceptable Change) process that will provide further standards for management within this Management Area. Upon public review and Forest Service approval, it will be incorporated into the Forest Plan as an amendment. Visitor use limits will be based on two components:

   a. The ability of the biophysical environment to withstand recreation use, and

   b. The amount and type of use that is consistent with some measure of quality river experience.

3. Complete the LAC process during 1986.

4. Continue Memorandum of Understanding with the Department of State Lands. The Memorandum of Understanding with Glacier National Park will be completed by November 30, 1986.

## Water

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.

2. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.

3. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

## Wilderness

Wild River Segment

1. Manage for a Primitive Recreation Opportunity.

2. Manage numbers of float outfitter permits and outfitter use at current levels until further data indicates these levels should be modified.

Recreation and Scenic River Segments Adjacent to Glacier National Park

1. Maintain commercial rafting services at or below present levels until further data indicates these levels should be modified without detriment to the recreation experience quality.

2. Retain the river islands in their natural condition except for very limited facilities necessary to protect resources.

## Visitor Management

Wild River Segment

1. Conduct river studies to further refine carrying capacity and to assess user preferences and needs.

2. Emphasize low impact use of the river through visitor education programs.

Recreation River Segment

1. Provide and develop selected suitable sites to offer general public access to the river and corridor area for all compatible recreation uses.

2. Support research efforts to determine river floater recreation carrying capacities.

3. Manage for a RNA (Road Natural-Appearing) recreation opportunity.

4. Continue the present number of outfitter floating visitor use allocations until further analysis supports the need for change.

Scenic River Segment

1. Manage for a SPM (semiprimitive motorized) recreation opportunity.

2. Favor wildlife over recreation development where conflicts occur.

3. Defer action on requests for increased number of outfitter floating requests until further analysis supports the need for such use and still maintains the values for which the river is managed.

### Forest Cover

Wild River Segment

1. Exclude timber cutting except as needed in associating with primitive recreation experiences; i.e., trail maintenance, trail constructions, etc.

Recreation River Segment

1. Design approved vegetative manipulations to protect the values for which the river was classified.

Scenic River Segment

1. Manage the vegetative cover in this segment for visual quality, wildlife protection, and water quality.

### Minerals

Wild River Segment

1. These segments are withdrawn by Congress from all forms of mineral entry or leasing.

Scenic and Recreation Segments

1. These segments were not withdrawn by Congress, but the Bureau of Land Management has made the decision to withhold leasing in these areas. Leases, if issued, should have a No Surface Occupancy stipulation.

2. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

## Minerals (continued)

3. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

## Visual Quality

1. Flathead National Forest lands within the Wild River Corridor segments in wilderness and outside of wilderness areas have a VQO (Visual Quality Objective) of Preservation.

2. Flathead National Forest lands within the Scenic segment have a VQO of Retention and the Recreation segments have a VQO of Partial Retention.

3. Private lands under scenic easements seen from the river have a recommended VQO of Retention. Unseen lands from the river have a recommended VQO of Partial Retention. Final VQO will be determined by the terms of the easements.

## Range

| | | |
|---|---|---|
| Wild River Segment | 1. | Wildlife has priority over recreation pack stock for forage needs. |
| | 2. | Deny requests for stock grazing, other than recreation pack stock. |
| Recreation River Segment | 1. | Monitor existing use to insure that it remains compatible with river and other resource values. |
| Scenic River Segment | 1. | Favor wildlife, recreation, and water quality where conflicts occur between grazing and the other resources. |

## Fish and Wildlife

1. Standards for fish and wildlife management for all segments of the river are found in FSM 2611.1--1, R-1, Supplement 45.

2. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

## Lands

Wild River Segment

1. Continue public ownership.

Recreation River Segment

1. Continue scenic easement and fee acquisition on a priority basis.
2. Work closely with landowners to provide for adequate levels of easement administration and inspection.
3. Mofify items currently under permit that do not blend or fit in with the natural environment, or terminate upon expiration of their current time period.

Scenic River Segment

1. Proceed with scenic easement and fee acquisition on a priority basis.

## Wildfire

Wild River Segment

1. Refer to the Phase II, Great Bear-Bob Marshall, 1983, and the Scapegoat-Danaher Fire Management Plan for specific directions for inside the wildernesses.
2. Meet fire suppression objectives with methods that least alter the natural setting outside the wilderness.

Recreation and Scenic River Segments

1. Meet fire suppression objectives with methods that least alter the natural setting in the river corridor.

## Insect and Disease

Wild River Segment

1. Exclude harvest of infested or diseased trees from the river corridor.
2. Take control measures as necessary outside the wilderness that are consistent with Wild River values.

Recreation River Segment

1. Management actions can be taken to control epidemic outbreaks of insect and diseases. Harvest will be done in a manner that protects the river values.

Scenic River Segment

1. Salvage/sanitation harvest can be accomplished to protect the river resource values.
2. No roads will be constructed that cannot be returned to their natural condition.

## Transportation

Wild River Segment

1. No roads are permitted in this segment of the river corridor.

Recreation and Scenic River Segments

1. Design roads and other projects on National Forest Systems lands to standards that protect or enhance the river values.
2. Manage road construction on private lands under terms of their scenic easements.

## Motorized Use

Wild River Segment

1. Prohibit public use of motorized equipment in the river corridor.
2. Permit administrative use of motorized equipment in emergency situations; i.e., fire, and search and rescue.

Recreation and Scenic River Segments

1. Prohibit use of boats driven by motors exceeding 10 horsepower. Administrative use of motors exceeding 10 horsepower may be authorized for emergency purposes. Permission to exceed 10 horsepower limitations will be granted only for the following reasons:
    a. Identified vessels of recognized search and rescue organizations or agency actively involved in search or rescue activities for suspected injured or drowning victims. Permission will not be granted for search for lost or damaged vessels, or equipment.
    b. Identified vessels of recognized search and rescue organizations or agency (FS, NPS, State) actively involved in training runs, or agency administrative or research activities _not possible_ via craft propelled by a 10 horsepower or less motor.
    c. All excepted vessels will be clearly identified while on the river. No recreational equipment will be carried on board during these trips.

## Signing

All Segments

1. Sign boundary segments (refer to unbound Appendix BB), access sites, and points at which floaters are entering and leaving shoreline of National Forest System lands.
2. Manage signing on private lands within the river corridor under terms of their scenic easements.

### Communications

| | | |
|---|---|---|
| All Segments | 1. | Continue to maintain existing communication systems. |

### Structures and Improvements

| | | |
|---|---|---|
| Wild River Segment | 1. | Screen administrative facilities from view of the river or blend them into the natural river setting. |
| | 2. | Do not permit additional outfitter base camps in the river corridor. Modify, blend, or relocate existing base camps so that they blend into the natural river environment. |
| Recreation and Scenic River Segments | 1. | Screen or blend administrative facilities into the natural river setting. |
| | 2. | Protect river values through purchase of scenic easements. Allow additional developments provided they fit into the natural river setting. |

### Research

| | | |
|---|---|---|
| All Segments | 1. | Permit research studies that are compatible with the river values and will provide a benefit for river management. |

### Cooperation and Visitor Information Services

| | | |
|---|---|---|
| All Segments | 1. | Continue cooperation with the Flathead County Sheriff and other agencies, as appropriate, in search and rescue missions. |
| | 2. | Develop an effective visitor education program, as appropriate, for each of the river segments or Management Areas. |

## Schedule of Management Practices (Average Annual Amount)

No management practices are scheduled.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 4, 5, 8, 10, 13, 14, 16-25, 38-41, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

## MANAGEMENT AREA 19

### DESCRIPTION

Management Area 19, Jewel Basin Hiking Area (15,368 acres*), consists of land designated under CFR 294. It is on the Swan Lake and Hungry Horse Ranger Districts and is administered by the Hungry Horse District Ranger.

Jewel Basin offers a recreation experience level typified by a substantially natural forest environment where outside influences are present, but minimized. Access to the area can be challenging for a hiker but does not necessarily require arduous physical exertion. The opportunity for natural sounds and scenes are present, but less than that found in wilderness.

All of Jewel Basin, plus a surrounding 16,000 acres, is being recommended for wilderness designation. Until Congress has made a decision on classification of this area, the wilderness values will be protected and managed in accordance with MA 19 goals and standards. If classified, a new wilderness policy will be developed for the area.

### GOALS

Manage this area for hiking activities. Realize full benefit from the unique and outstanding characteristics of the area. Provide opportunities for a recreation experience level between that found in wilderness and areas accessible by roads, but not satisfied in either. Manage the area for semiprimitive nonmotorized recreation opportunities.

Satisfy the psychological needs of individuals seeking a rewarding and meaningful recreation experience in a near primitive forest environment.

Manage to provide a balance between the needs of people and the desired social, physical, and biological setting. Maintain the area in its roadless state.

In areas recommended for wilderness, maintain all wilderness values until Congress reaches a decision on wilderness additions. Total proposed wilderness within this Management Area is 15,368 acres.

### STANDARDS

**In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply in this Management Area:**

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* Includes proposed wilderness acres.

## Visitor Use Management

1. Management action for limiting and/or distributing visitor use in this area will be based on application of the Limits of Acceptable Change (LAC) process described by Stankey, et al, in The Limits of Acceptable Change (LAC) System for Wilderness Planning, Intermountain Forest and Range Experiment Station, USDA - Forest Service, General Technical Report INT-176, January 1985. The LAC system provides a framework for determining the range of social and resource conditions acceptable in wilderness settings in order to ensure a diversity of high quality wilderness recreation opportunities is provided. It focuses on limiting change to resources that, if overused, would degrade the wilderness experience, and defines opportunities for various levels of contact with the natural scene. The concept recognizes that an area's ability to accommodate use depends on several variables, including the intensity of management, visitor behavior, timing or season of use, and elevation and habitat of the specific sites involved. Upon public review and Forest Service approval, management actions will be incorporated into the Forest Plan as an amendment.

2. Complete the LAC process by December 31, 1989.

3. Management and development will favor visits of short duration.

## Recreation

1. Installations which will facilitate public use such as simple fireplaces, toilets, and trails and other improvements for visitor use will be provided as necessary for the protection and management of the near primitive forest environment.

2. Locate public campsites at a sufficient distance from lakes, streams, trails, or other natural attractions to allow appropriate use without unacceptable depreciation of the focal point of public interest.

3. Identify and protect historic, scenic, geological, and similar sites or areas.

4. Continue the "pack it in--pack it out" policy for all unburnable garbage.

5. Pit toilets may be used providing their installation meets the following requirements:

   a. Will not pollute adjacent waters.

b. Located at least 100 feet from open water.

c. Are constructed with approved design plans.

6. The following uses are not conforming and will not be permitted in the area by the public:

   a. Packstock (e.g. horses, llamas, mules).

   b. Motorized vehicles (e.g. trail bikes, snowmobiles).

   c. Motorized equipment (e.g. generators, outboard motors, chainsaws).

   d. Mechanized trail vehicles (e.g. mountain bicycles).

   e. Helicopter landings.

   Exceptions will be made for nonmotorized wheelchairs used by disabled persons.

   The Forest Supervisor may authorize use of motorized equipment or livestock as deemed necessary for the administration of the area and its resources.

7. Packstock approved for administrative use will not remain within the hiking area overnight.

8. Deteriorated campsites will be rehabilitated or allowed to recover by closing them to public use.

9. The Regional Forester will promulgate special rules and regulations to meet safety requirements.

### Wilderness

1. No action can occur in recommended wildernesses which will reduce the areas' wilderness attributes until Congress has made a decision on wilderness classification or otherwise specified how these areas will be managed.

### Timber

1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

2. Necessary insect and disease control measures shall minimize adverse effect on recreation values.

## Forage

1. Forage will be maintained in its natural state primarily for wildlife use.
2. Seeding or transplanting of native plants (or plants that are established in the area) may be done where soil is eroding.

## Wildlife

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.
2. Goat habitat will be protected.

## Fisheries

1. Work with the Montana Fish and Game to coordinate habitat improvement programs to maintain fisheries.
2. Species of trout most adaptable to the habitat will be maintained in lakes.

## Water

1. Vegetative cover will not be manipulated to increase water yield.
2. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.
3. Refer to the Forest-wide standards under Water and Soils for Best Management Practices, Landtype Guidelines, and standards applicable to projects or activities within this Management Area.
4. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

## Soils

1. Trail improvement, trail construction, and campsite development will be implemented with emphasis to soil stabilization.

## Land Occupancy

1. Structures and uses will be planned and coordinated to cause the least disturbance to recreation values.

Land Occupancy (continued)

2. Limitations on visitor numbers should be a last-resort management effort when other management measures cannot maintain quality resource values.

3. Outfitter special use permits will not be issued.

4. This Management Area is an avoidance area for utility corridors (see Appendix J).

## Fire Control

1. At present, there is not an obvious need for prescribed fire, however, it may be used as a management tool providing the recreation resource is given primary consideration.

2. Use fire suppression measures and techniques which achieve fire control objectives with the minimum adverse impact on recreation values. Give preference to methods and equipment which least alter the landscape or disturb the land surface.

3. A pre-attack fire plan will be prepared for the area.

## Transportation

1. Transportation planning will be directed to meet the recreation needs of the area.

2. Coordinate access to the area with the carrying capacity of the hiking area.

3. Trails shall be located and constructed to minimize the alteration of the landscape and reduction of scenic value.

4. Alpine meadows, lakes, and goat range presently without trails shall be studied and the value with and without a trail system analyzed before deciding upon construction of trails.

5. Helicopters may be used for administrative purposes. This includes use by the Montana Fish and Game, service trips to the television repeater site and Forest Service administrative use. Flights will be planned and coordinated with the Forest Supervisor to effect the least disturbance to recreation visitors.

6. The special-use road to the television microwave repeater sites will not be maintained for public use.

### Signing

1. Ranger Districts will jointly prepare a coordinated sign plan.
2. Where feasible, regultory signs will be posted outside the area.
3. Signing will be confined to the minimum necessary to give directions and meet interpretive needs.

### Information and Education

1. A brochure will cover interpretive features, forest manners, and recreational opportunities.

### Minerals

1. The surface management philosophy for Jewel Basin is similar to that of wilderness from the standpoint of mineral development. Surface occupancy is not acceptable. The outer portions of Jewel Basin have been leased with No Surface Occupancy stipulations. These areas may be accessible from drill sites outside of Jewel Basin through directional drilling. The inner core of Jewel Basin, with no current technology available for accessing via directional drilling, will not be leased. Upon approval of the Forest Plan, a formal mineral withdrawal, which prohibits surface occupancy for any mineral activity, will be prepared.

### Schedule of Management Practices (Average Annual Amount)

| Management Practice | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Trail Construction/ Reconstruction | Miles | 0.1 | 0.1 |

### Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 4, 5, 8, 10, 13, 14, 16-25, 48-54, 57, 58, and 59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

## MANAGEMENT AREA 20

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### DESCRIPTION

Management Area 20 includes Big Mountain Winter Sports Area (3,574 acres). Currently, about 3,036 acres are managed under special-use permit as a winter sports area. The remainder of this Management Area provides opportunities for Big Mountain expansion. The Big Mountain complex is only partially located on National Forest System lands. These lands are on the Tally Lake Ranger District and the Glacier View Ranger District. Tally Lake Ranger District manages the area.

### GOALS

Continue management as a winter sports area under a Big Mountain Resort Area Master Plan as approved by the Forest Supervisor.

### STANDARDS

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:

#### All Resource Elements

1. Management direction for all resources is provided by the approved portion of the Big Mountain Resort Area Master Plan as described in the decision notice (see Appendix NN).

#### Water

1. Maintain long-term water quality to meet or exceed State water quality standards. To ensure meeting these standards, surface-disturbing activities will be monitored where this need is identified.
2. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects.

#### Visual Quality

1. The visual quality objective is modification.

#### Wildlife and Fish

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat.

Wildlife and Fish (continued)

2. Maintain the number and distribution of snags for at least 100 percent of the maximum potential population of snag cavity dependent species. Manage for a minimum 225 snags/100 acres composed of:

   14 snags greater than 20" d.b.h.
   136 snags greater than 12" up to 20" d.b.h.
   75 snags greater than 10" up to 12" d.b.h.

   Consideration will be given to location and availability of snags in adjacent Management Areas.

Timber

1. Lands are classified as unsuitable for timber management, and timber harvest will not be scheduled.

Minerals

1. Exploration and development activities allowed under the mining laws, Mining Act Use Regulations, and the Mineral Leasing Act will be in accordance with approved permits and plans of operation.

2. Oil and Gas lease stipulations will be applied within this Management Area by landtype as stated in the Landtype Guidelines (Appendix Q). Special stipulations may be necessary for certain activities because of the management goals for this area (refer to AFFECTED ENVIRONMENT, EVALUATION CRITERIA in Appendix O).

Lands

1. This Management Area is an avoidance area for utility corridors (see Appendix J).

## Schedule of Management Practices (Average Annual Amount)

No management practices are scheduled.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 4, and 48-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

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**DESCRIPTION**

Management Area 21 (996,381 acres) consists of the Great Bear Wilderness, designated in 1978 by the U.S. Congress, and the Flathead National Forest portion of the Bob Marshall Wilderness. The Bob Marshall Wilderness was classified in 1964 by the U.S. Congress. The Flathead National Forest, Spotted Bear Ranger District, manages about 70 percent of the Bob Marshall Wilderness. Management of the remaining 30 percent is provided by the Lewis and Clark National Forest. Hungry Horse Ranger District and Spotted Bear Ranger District share management responsibility for the Great Bear Wilderness.

**GOALS**

Manage these areas in accordance with the Wilderness Act of 1964 to maintain an enduring system of high quality wilderness representative of National Forest ecotypes.

Perpetuate the wilderness resource for future generations and, in response to this goal, the visual quality objective is preservation.

To the extent that it is consistent with the first two goals, provide opportunities for public use, enjoyment, and understanding of wilderness and the unique experiences dependent upon a wilderness setting.

Maintain plants and animals indigenous to the area by protecting the natural dynamic equilibrium associated with natural, complete ecosystems.

Accommodate and administer those "nonconforming but accepted" uses provided in the Wilderness Act and subsequent acts in a way to minimize their impacts.

Consider the special protection needs of endangered plant and animal species and their habitats.

**STANDARDS**

Management standards for resources in the Bob Marshall/Great Bear/Scapegoat Wilderness Complex were jointly prepared by the Lolo, Lewis and Clark, Helena, and Flathead National Forests for common, integrated administration of these three adjoining wildernesses.

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:

Visitor Use Management

1. Management action for limiting and/or distributing visitor use in these wildernesses will be based on application of the Limits of Acceptable Change (LAC)

process described by Stankey, et al, in The Limits of Acceptable Change (LAC) System for Wilderness Planning, Intermountain Forest and Range Experiment Station, USDA - Forest Service, General Technical Report INT-176, January 1985. The LAC system provides a framework for determining the range of social and resource conditions acceptable in wilderness settings in order to ensure that a diversity of high quality wilderness recreation opportunities is provided. It focuses on limiting change to resources that, if overused, would degrade the wilderness experience, and defines opportunities for various levels of contact with the natural scene. The concept recognizes that an area's ability to accommodate use depends on several variables, including the intensity of management, visitor behavior, timing or season of use, and elevation and habitat of the specific sites involved. The lands within these wildernesses will be assigned to one of the four wilderness recreation opportunity classes described in Appendix R. The management emphasis for each opportunity class is stated in the Managerial Setting portion of the description. The emphasis will be on Opportunity Classes I and II except around heavily used trail corridors. Upon completion of public review and Regional Forester approval, additional direction for limitation and distribution of use will be incorporated into the Forest Plan, in accordance with the amendment provisions of 36 CFR 219.10 (a).

2. The current limits on party size (15), head of livestock per party (35), and length of stay (14 days) will remain in effect. Exceptions must be approved in writing by the local District Ranger.

3. Managers of the Scapegoat, Great Bear, and Bob Marshall Wildernesses will meet at least annually to discuss priorities for the use of wilderness rangers at overused areas and trailheads that are takeoff points to them. Managers will establish coordinated guidelines for the training of wilderness rangers and schedule training on a regular basis to ensure continuity of personnel adequately trained and current in state-of-the-art wilderness management techniques.

4. As encountered, remove or obliterate improvised camp structures, tent poles, fire rings, and other camp location indicators.

5. Establish a situation reporting network to keep administrative units updated on use, site conditions, trail conditions, and other helpful information that would support indirect, voluntary methods of visitor management. These reports will be made as needed. Information will not be provided to mass media, but used to respond to specific inquiries.

6. Managers may consider party size and duration of stay limits more restrictive than those currently in effect at sites where the limits of acceptable change are being approached or have been reached or exceeded. Inform outfitters and the public at least 30 days prior to implementing changes. In cases where site impacts exceed acceptable levels for the assigned wilderness opportunity class (Appendix R), immediate closure will be considered. Outfitters will be given 1 year's advance notice of changes which significantly affect their operations when an emergency does not exist. Notices will convey clearly the intent and purpose of changes from the current limits.

7. Visitor education and information programs will emphasize visitor contacts at portals and prior to the visitor reaching the wildernesses. Programs will be designed to allow about 60-80 percent of the users to read or hear the wilderness message prior to entering the area.

8. Encourage visitors to adopt a Low Impact Camping ethic:

   - Use self-contained stoves.
   - Remove fire circles and scatter remaining charcoal.
   - Refrain from cutting green trees or limbs.
   - Practice a Pack-in Pack-out policy.
   - Use biodegradable soap and dispose of human waste and waste water from cooking and washing at least 100 feet from streams and lakes.

9. A public notice will be placed on the major portal bulletin boards requesting visitors' cooperation in refraining from disturbing archeological resources.

10. Prior to completion of the LAC process, the following interim standards will be followed:

    a. The primary objective of wilderness managers will be to minimize the amount of regulations and control present in wilderness. In conjunction with this objective, managers and wilderness rangers must work toward the preservation and restoration of the wilderness resource. (See FSM 2320.1 for a discussion and definition of wilderness and wilderness management objectives.) Managers will try indirect, voluntary methods as a first choice, monitor effects, and proceed to more direct enforcement strategies as needs dictate.

b. Managers will concentrate on improving conditions at campsites with unacceptable impacts such as the following:

   1) 50 percent or more of the available ground cover reduced or removed in the immediate area,

   2) absence of seedlings and saplings,

   3) tree roots exposed; tree boles defaced,

   4) abundance of nonnative plant species,

   5) lack of fuelwood,

   6) rock fire rings,

   7) trails radiating from the site to latrine locations, and creeks.

c. The following methods will be used for managing campsites with unacceptable impacts. The methods used at specific sites and areas will be developed according to the LAC process.

   1) Public information (public service media messages, portal notices, personal contact geared to informing the public what to look for in a campsite and the characteristics of sites they want to avoid. Emphasize low impact camping.

   2) Physical site alteration. Make unacceptably impacted sites less appealing/less accessible. Remove fire rings and other evidence of man's presence.

   3) Post a site restoration message at portals and a sign at the overused site. Suggest alternative camping locations (by characteristic, not specific location) on the portal notice.

4) For specific sites, set limits on party size, length of stay, and equipment requirements (e.g., stoves rather than campfires). Requires that the public be informed of areas to which limitations and requirements apply; requires followup administration to check for compliance.

5) Initiate a self-issuing permit system. Post a destination signup sheet at portals to help managers and wilderness visitors alike to learn where other visitors intend to camp. This method must be accompanied by public information efforts to work effectively.

6) Site specific closures involve informing the public, posting notices on portals and at administrative sites, and signing sites as closed to all camping until further notice. This method also requires administrative followup.

7) A mandatory issued permit system requires users to check in at an administrative site and obtain a camping permit. Administrative units need to coordinate and communicate numbers of persons permitted at specific problem sites. Administrative followup is required.

Wildfire

1. Refer to the Wilderness Fire Plan, Phase II, Great Bear-Bob Marshall, 1983 (Appendix LL), and the Scapegoat-Danaher Fire Management Plan for specific direction.

Insects/Disease

1. No control measures will be considered without an appropriate environmental analysis. If control of insects and disease is necessary, it shall be carried out by measures which have the least adverse impact on the wilderness resource.

Wildlife and Fish

1. Fish and wildlife management in the complex will be consistent with Policies and Guidelines for Fish and Wildlife Management in Wildernesses and Primitive Areas adopted by the Forest Service, Bureau of Land Management, and the International Association of Fish and Wildlife Agencies.

2. Managers will consult annually with personnel from the Montana Department of Fish, Wildlife and Parks relative to levels of harvest appropriate for maintaining native hunted and trapped species as part of the wilderness resource.

3. Natural processes such as fire, wind, and insect and disease activity will be the only agents permitted to influence vegetation and its associated wildlife in the wildernesss. No new exclosure structures will be installed.

4. The conservation of threatened and endangered species and their habitats will receive high priority in management of the wilderness resource.

5. The grizzly bear will continue to be a part of the wilderness experience. The public will be kept informed of known grizzly problem areas, but use will generally not be restricted from these areas. Education of bear avoidance techniques will be emphasized. Forest Supervisors will direct the development of more detailed standards necessary to protect both the bear and wilderness visitors. These standards will be consistent with Forest-wide standards for grizzly bear management in occupied grizzly bear habitat, and will be incorporated into the Forest Plan through amendment.

Cave Management

1. Caves will be managed as an element of the wilderness resource with the objective of allowing them to remain untrammeled without significant development or advertisement. Retain the opportunity for the public to experience cave discovery and challenge. Wilderness caves shall not be signed, nor will they be marked on maps or discussed in brochures.

2. The interior portions of caves in wilderness are subject to the same management guidelines that apply to all other portions of wilderness. Permanent reference markings within caves are not permitted. Flagging may be used if promptly removed after it has served its purpose. Permanent or semipermanent installations and facilities are not permitted. All camping and exploration equipment will be packed out at the end of each trip unless excepted in writing by the District Ranger. Permanent caches will not be permitted.

3. The appropriate wilderness manager will establish contact with local caving clubs. Prior to any group's commencing exploration activity, a memorandum of understanding/volunteer agreement will be prepared

addressing the items discussed above and the following: schedules; party sizes; campsites; length of stay; exploration methods; removal of equipment; and campsite cleanup. Groups will be encouraged to avoid publicizing/promoting cave locations and attractions.

4. Caving is considered a high risk activity. In keeping with wilderness management philosophy, no specific actions will be taken to reduce the hazards encountered in cave exploration.

## Lake Management

1. Minimize the evidence of man's activities around the lakes and return those showing signs of overuse in a more pristine condition.

2. Managers and wilderness rangers will encourage visitors to practice low impact camping techniques. Efforts will include informing the public of State laws that prohibit contaminating lakes with fish entrails and other refuse.

3. The use of chemical agents such as soap, detergents, and bleaches, whether biodegradable or not, will not be permitted in lakes.

4. Stock will not be tied, corraled, or picketed within 100 feet of a lake, spring, or stream.

## Grazing

1. The Conference Report to S. 2009 (H.R. 96-1126) in the section under "Grazing in National Forest Wilderness Areas", FSM 2323.2, established guidelines and policy relative to domestic livestock grazing in wilderness. These guidelines and subsequent Forest Service Manual directives govern livestock management in wilderness.

   This direction includes:

   a. Grazing in wilderness will be controlled under general regulations governing grazing. Any adjustments in the number of livestock permitted to graze in wilderness should be made as a result of land management plans or revision in grazing plans given consideration to legal mandate, range conditions, and the protection of the range resource from deterioration.

   b. The maintenance of supporting facilities existing in an area prior to wilderness classification is permissible.

   c. The replacement or reconstruction of deteriorated facilities should not require the use of "natural materials".

   d. The construction of new improvements or replacement of deteriorated facilities is permissible if in accordance with appropriate plans.

2. All grazing areas within the wilderness will be designated as livestock grazing allotments. Objectives for the allotment management will be consistent with resource conditions in the assigned wilderness experience opportunity class (Appendix R). Managers will establish this process direction for:

   a. spring and early summer grazing dates (generally not before July 1) based on range readiness checks;

   b. determination of carrying capacity, condition, and trend;

   c. monitoring of actual use levels.

3. Livestock grazing will be limited to areas capable and suitable for such use. The criteria for determining capability and suitability will be developed as part of an inventory of the forage resources in the wildernesses.

4. Permanent range structures, not authorized by permit, will be removed.

5. Managers will encourage horse and packstock users (including administrative, outfitter, and private parties) to plan for the fewest number of animals required for each trip. No more than 35 horses or mules will be permitted per party. Lower limits will be considered where warranted and considered necessary to protect the wilderness resource. As a guide, encourage the use of one pack animal for each two persons in a party. It is recognized that stock users may need two animals (one pack, one riding) per person during the hunting season.

6. Salt for livestock will be in block form and will be kept in leach-proof containers. Salt will be packed out of the wilderness at the end of each trip or at the end of the permitted use period.

7. Managers will inform persons using stock in the wilderness of the noxious weed problem. When supplemental feed is required, encourage the use of weed-free hay and pellets. Wilderness manager-public contacts should emphasize the relationship between overused, disturbed sites and noxious weed establishment. Stock users will be encouraged to use weed-free hay, but certification will not be mandatory.

8. Before a decision is made to control noxious weeds with chemicals, an environmental document must be prepared discussing the need for control, risk to human health and the method to be used.

Transportation System and Signing

1. The management of the trail system including design standards, maintenance frequency and levels in the Complex will be in accordance with the direction developed through the LAC process.

2. In the interim, trail standards and trail maintenance priorities are described in Appendix D.

3. Managers will agree to appropriate maintenance schedules and standards for trails or segments of trails that cross administrative boundaries at coordination meetings. All administrative segments of such trails will be maintained to the appropriate standard during the same season.

4. Managers will establish design standards and maintenance criteria for all portals. As a minimum, portals will have a bulletin board featuring a map of the area, and pertinent visitor information.

5. Sign standards, mounts, and materials will be in accordance with standard R-1 specifications for Wilderness. Nonconforming signs will be phased out by attrition.

   Signs will be posted and used only when maps and route descriptions cannot adequately serve the wilderness users.

   The following signs will be permitted: wilderness boundary signs, directional signs at trail junctions, and administrative signs. Trail signs will only contain the trail name. Destinations and/or mileage will not be included on trail signs within wilderness.

## Cultural and Historic Resources

1. Cultural and historic resources will be considered a unique and nonrenewable part of the wilderness. Above-ground evidence of sites or structures will be subject to natural processes.

2. Scientific study of these resources is permissible within the intent and concept of wilderness.

3. Complete a cultural resource assessment on the evidence of man's activities and structures in the wilderness. Objectives of the assessment are to identify and nominate to the National Register of Historic Places those structures that qualify, and evaluate alternatives for handling those that do not.

## Outfitter and Guide Operations

1. Administration of outfitter permits will be in accordance with Forest Service Manual 2721.53.

2. Prior to making a decision on the level of outfitter services, no additional outfitter and guide permits will be issued nor will approval be granted to expand operations beyond use levels authorized in 1978-1980 special use permits. The maximum use level for each outfitter is based on the highest annually permitted use during the years 1978-1980.

3. A decision will be made establishing the level of outfitter services following completion of the LAC process and/or additional environmental analysis. The decision will include at least the following criteria:

    a. type and amount of services;

    b. existing operations to determine how they meet identified needs;

    c. existing operations to determine how they meet overall wilderness management objectives.

4. Increase on-the-ground administration and management of outfitter-guide permits.

5. Encourage outfitters to develop and use minimum impact use techniques, and to educate their clientele to these techniques. Emphasize the role of these techniques and their use in protecting the wilderness resource and the continued recognition of outfitter operations as a means for many publics to enjoy this resource.

6. The Outfitter Special Use Permit will be the basis for determining conduct of outfitter and guide activities within the wilderness. Operations such as overnight use, day use, and drop camps shall be included.

7. Managers will develop camp standards for outfitter operations based on the Regional Forester's policy resulting from the 1980 R-1 National Forest Outfitters and Guides Task Force recommendations and the LAC process. The standards should delineate acceptable developments and the extent of development, including:

   a. camp locations relative to trails, streams, lakes, and features;

   b. permanent and temporary improvements authorized;

   c. camp layout.

8. The use of spike camps will be evaluated during development or review of outfitter management direction. Spike camps which are not being utilized appropriately will be either reclassified accordingly, or use changed to abide by the terms of the permit.

9. Intensify efforts to eliminate or reduce unlicensed or unauthorized outfitter and guide use.

Administrative Facilities

1. Existing administrative structures and facilities will be retained for wilderness administrative purposes during this planning period.

2. Cultural assessments of facilities will be required before decisions concerning their future status are made.

3. No new facilities or major expansion of existing facilities (administrative sites, lookouts, fences) will be considered during this planning period.

4. Radio repeaters, if necessary for wilderness administration, may be installed within wilderness only if locations outside the wilderness will not achieve communication needs.

## Administrative Coordination

1. To achieve coordinated and consistent management of the Scapegoat, Great Bear, and Bob Marshall Wildernesses, retain the management coordination team composed of District Rangers from each administrative unit. The team will serve as a coordinating body, making recommendations to appropriate Forest Supervisors concerning program budget proposals, standards and guidelines, and the implementation and monitoring of management directioh.

## Minerals, Oil and Gas Leases

1. The 1964 Wilderness Act (P.L. 88-577) withdrew the Bob Marhsall, Scapegoat, and Great Bear Wildernesses from mining and mineral leasing laws effective midnight, December 31, 1983, except that, valid existing mining claims will be administered in accordance with appropriate mining laws.

2. Operating plans will minimize degradation of wilderness values.

## Emergency

1. Motorized equipment and mechanical transport may be alloed when an emergency condition exists which involves the health and safety of human beings (FSM 2326.11).

2. Removal of bodies and seriously ill or injured persons will be considered an emergency justifying landing of an aircraft. For emergency helicopter landings, natural openings will be utilized where possible rather than cutting new openings.

3. Public communications from inside wilderness will be restricted to emergencies.

## Water

1. Monitor water quality to meet or exceed State water quality standards.

2. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects. If the unacceptable effects can not be adequately mitigated, the project will be redesigned or abandoned.

Air Quality

1. **Manage the airshed in the Bob Marshall and Scapegoat to meet Class I Air Quality Standard and Class II in the Great Bear and the Bob Marshall addition in the Lewis and Clark National Forest.**

2. **Where manageable or negotiable, identify and mitigate outside influences. The air quality related values will be identified when a PSD (Prevention of Significant Deterioration) action that may impact the wilderness is received.**

Research

1. Research may be conducted in wilderness but must be done in accordance with the concept of wilderness and within the constraints of FSM 2320. Requests will be considered only if wilderness is essential to the results of the research, there being no suitable land areas elsewhere. Where possible, research projects should be directed outside wilderness where similar areas are available or where wilderness values would not be jeopardized in the conduct of research. Research projects will be reviewed by the management coordination team and approved by the Regional Forester (see FSM 2323.9).

Continental Divide Trail

1. A specific CDNST (Continental Divide National Scenic Trail) route will not be identified prior to approval of the comprehensive plan being prepared by the Department of Agriculture.

2. Individual inquiries about the trail will be handled on a case-by-case basis. Routes suggested may vary depending on the method of travel, proposed length of stay, season of travel, and degree of challenge desired.

3. One person per Forest will be designated as responsible for handling inquiries concerning the CDNST.

Lands

Special Uses

1. **These Management Areas are exclusion areas for utility corridors (see Appendix J).**

2. **The Lolo Forest Landownership Adjustment Program will establish the priority for acquiring the private land in the Scapegoat Wilderness.**

## Wild and Scenic River

1. Where segments of the Flathead Wild and Scenic River are located in the Wilderness Complex, the more stringent standards will prevail.

## Schedule of Management Practices (Average Annual Amount)

| Management Practice | Units | Proposed Decade 1 | Probable Decade 2 |
|---|---|---|---|
| Trail Construction/ Reconstruction | Miles | 2.5 | 2.5 |

## Monitoring and Evaluation Requirements

he monitoring requirements from Chapter V that are applicable to this Management
rea are: 1, 2, 4, 7, 8, 10, 13, 14, 16-25, 48-50, 53, 54, and 57-59. The
rocedure outlined in Chapter V will be followed to evaluate the data gathered
ring monitoring.

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**DESCRIPTION**

Management Area 22, the Mission Mountains Wilderness (73,573 acres), consists of classified wilderness designated in 1975 by the U.S. Congress. Primary management responsibility is held by the Swan Lake Ranger District.

**GOALS**

Manage this area in accordance with the Wilderness Act of 1964 to maintain an enduring system of high quality wilderness representative of all National Forest ecotypes.

Perpetuate the wilderness resource for future generations, and in response to this goal, the visual quality objective is preservation.

To the extent that it is consistent with the first two goals, provide opportunities for public use, enjoyment, and understanding of wilderness and the unique experiences dependent upon wilderness setting.

Maintain plants and animals indigenous to the area by protecting the natural dynamic equilibrium associated with natural, complete ecosystems.

Accommodate and administer those "nonconforming but accepted" uses provided in the Wilderness Act and subsequent acts in a way to minimize their impacts.

Consider the special protection needs of endangered plant and animal species and their habitats.

**STANDARDS**

In addition to the Forest-wide Management Direction included in Chapter II of this Plan, the following standards will apply to this Management Area:

All Resource Elements

1. Management action for limiting and/or distributing visitor use in this wilderness will be based on application of the Limits of Acceptable Change (LAC) process described by Stankey, et al, in The Limits of Acceptable Change (LAC) System for Wilderness Planning, Intermountain Forest and Range Experiment Station, USDA - Forest Service, General Technical Report INT-176, January 1985. The LAC system provides a framework for determining the range of social and resource conditions acceptable in wilderness settings in order to ensure a diversity of high quality wilderness recreation opportunities is provided. It focuses on limiting change to resources that, if overused, would degrade the wilderness experience, and defines opportunities for various levels of contact with the natural scene. The concept recognizes that an area's ability to

accommodate use depends on several variables, including the intensity of management, visitor behavior, timing or season of use, and elevation and habitat of the specific sites involved. Upon public review and Forest Service approval, management actions will be incorporated into the Forest Plan as an amendment.

2. Complete the LAC process by December 31, 1987.

## Transportation System

1. Generally new trails will not be constructed.
2. Relocate or reconstruct portions of heavily eroded trails as necessary to prevent soil erosion.
3. For large portions of the wilderness will remain trailless, encourage off-trail travel. Do not identify on Forest Service maps trails that might develop as a result of this travel.
4. Evaluate the possibility of providing loop trips utilizing portions of old abandoned trails.
5. Permit nature to modify the 9 miles of existing high standard trails by allowing the brush to encroach on the tread and the grade to undulate.
6. Trail maintenance priorities are set in Appendix D. Appendix D also defines appropriate trail standards.

## Use Areas

1. The boat landing at the upper end of Lindbergh Lake will not be improved.
2. Continue to monitor the closure and the rehabilitation of the overnight campsites at Glacier and Cold Lakes. As necessary, close additional overused campsites to allow for their recovery.

## Signs

1. The management of the trail system including design standards, maintenance frequency and levels in this wilderness will be in accordance with the direction developed through the LAC process.
2. Limit signs within the wilderness to directional signs at trail junctions and necessary temporary administrative signs. Trail signs will contain only trail name and number. Destinations will not be included. Natural features will not be signed.

3. Install boundary signs at selected locations where snowmobile use occurs to prevent trespass.

4. Install the standard Northern Region wilderness information board at all trailheads.

Cultural Resources

1. Cultural and historic resources will be considered a unique and nonrenewable part of the wilderness resource. Above-ground evidence of sites or structures will be subject to natural processes in the same manner as other wilderness resources.

2. No maintenance, rehabilitation, restoration, or interpretation will be provided.

3. Scientific study of these resources is permissible within the intent and concept of wilderness. Study of management will not normally include any excavation, restoration, perpetuation, or interpretation activites (see also FSM 2324.8).

4. Survey 1 percent of the area per year.

Visitor Use Management

1. Develop indirect, voluntary methods of visitor management, then monitor effects, and proceed to more direct enforcement strategies as needs dictate. Specific visitor management actions will be developed in the LAC process.

2. The basic policy governing visitor information and interpretive services within wilderness and about the wilderness resource should be to provide for user safety, educate users to basic concepts of ecology and care of ecosystems, identity and inform the public of the range of recreation opportunities surrounding area, and present patterns of use and preserve the primitive recreation experience (see FSM 2323.12b).

3. Continue with the current volunteer registration system to gather baseline data for establising limits of acceptable change and to facilitate public contact and education.

4. Encourage visitors to adopt a Low Impact Camping ethic:

   - Use self-contained stoves.
   - Remove fire circles and scatter remaining charcoal.

- Refrain from cutting green trees or limbs.
- Practice a Pack-in Pack-out policy.
- Use biodegradable soap and dispose of human waste and waste water from cooking and washing at least 100 feet from streams and lakes.

6. Designate Glacier, Cold, and Upper Cold Lakes for day use only.

7. Encourage groups to limit their size of party to eight. Groups larger than eight should disperse at campsites.

Research

1. Research may be conducted in wilderness but must be done in accordance with the concept of wilderness and within the constraints of FSM 2320. Requests will be considered only if wilderness is essential to the results of the research. Where possible, research projects should be conducted outside wilderness where similar areas are available or where wilderness values would not be jeopardized in the conduct of research. Research projects will be reviewed by the management coordination team and approved by the Regional Forester (see FSM 2323.9).

Resource Protection

1. Concentrate on improving conditions at degraded sites. Standards for identifying degraded sites will be established through the LAC process. The following priorities are to be used in correcting problems at degraded sites pending completion of this process:

   a. Public information and education
   b. Physical site alteration
   c. Restoration of signs and messages
   d. Party size, length of stay, and equipment
   e. Limits for specific sites
   f. Self-issuing permits
   g. Mandatory permits
   h. Site closure

Coordination

1. Recognize and consider wilderness values in timber management practices adjacent to the boundary.

2. To the extent possible, coordinate management of the Mission Mountains Wilderness with management of that portion of the Mission Mountains administered by the Confederated Salish and Kootenai Tribes as a tribal wilderness.

## Fish and Wildlife

1. Adhere to the Forest-wide standards for grizzly bear management in occupied grizzly bear habitat. The conservation of threatened and endangered species and their habitats receive high priority in the management of the wilderness resource (see FSM 2670.3 and FSH 2323.3). Annual contact will be established and maintained with Border Grizzly Project personnel to assure continued and up-to-date knowledge of grizzly bear population dynamics. Similar contact will be established with members of the Wolf Ecology Project.

2. To the extent possible, wildlife species in wilderness should be allowed to maintain a natural balance with their habitat and each other. Wildlife may be harvested under State regulations. Fish management will be consistent with wilderness values (see FSM 2323.3).

3. Natural processes such as fire, wind, and insect and disease epidemics will be the only agents permitted to influence vegetation in the wilderness and its associated wildlife. No exclosure structures will be installed, and no vegetation manipulation projects will be considered.

## Grazing

1. Provide hitchracks in the following areas for the indicated number of stock: Cedar Lake - 8 head, Piper Lake - 8 head, Mollman Lake - 16 head.

2. Provide information and work with horse users on how to use stock in harmony with the wilderness environment.

3. Encourage supplemental feed for recreation stock.

4. Monitor recreation stock grazing sites annually and impose restrictions as necessary.

## Minerals

1. The 1964 Wilderness Act (P.L. 88-577) withdrew the Mission Mountains Wilderness from mining and mineral leasing laws effective midnight, December 31, 1983, except that valid existing mining claims will be administered in accordance with appropriate mining laws.

2. Operating plans will minimize degradation of wilderness values.

Buildings and Facilities

1. No permanent structures for the administration of wilderness will be built.

2. Prior to construction of any facilities, an investigation of the disturbed area will be conducted to insure that endangered plant species will not be disturbed and/or destroyed.

Lands

1. This Management Area is an exclusion area for utility corridors (see Appendix J).

Wildfire

1. Naturally occurring fires will generally be allowed to fully play their natural role in ecosystems of the area. Natural fires will be monitored, and when they threaten life and/or property within the wilderness, or when unacceptable damage to life, resources, or property outside wilderness is imminent, appropriate suppression action will be taken.

2. The determination of fire's natural role in these ecosystems and predictions of fire behavior will be based on soil characteristics, fuels, cover types, natural barriers, erosion potential, weather patterns, and research into how fire has affected different ecosystems and how fire protection has influenced that role.

3. An environmental analysis for fire management units within the wilderness will define the role of fire within those units. A fire management prescription will be prepared for each management unit and will specify whether fire may or may not be allowed to burn, under what conditions it may burn, and any desired modifications of control principles and techniques. Fire management plans and prescriptions will be developed according to the criteria contained in FSM 5130.

4. Suppression decisions for man-caused fires escaping initial attack will reflect consideration for wilderness values, suppression costs, natural barriers, and anticipated fire behavior. Control methods and equipment that least alter the landscape or disturb the land surface will be used. Bulldozers or other heavy equipment that disturb soil will not be used to control fires (see FSM 2324.2 and FSH 5109.07, R-1 Supplement #2, May 1975).

## Law Enforcement

1. Within wildernesses, law enforcement controls will be achieved primarily through visitor education and information rather than direct enforcement action.

## Emergency

1. Motorized equipment and mechanical transport may be allowed when an emergency condition exists which involves the health and safety of human beings (FSM 2326.11).
2. Removal of bodies and seriously ill or injured persons will be considered an emergency justifying landing of an aircraft. For emergency helicopter landings, natural openings will be utilized where possible rather than cutting new openings.
3. Public communications from inside wilderness will be restricted to emergencies.

## Insect and Disease

1. Insects or disease outbreaks will not be artificially controlled, unless it is necessary to protect timber or other valuable vegetation outside the wilderness. Surveys to monitor Forest insect and disease in wilderness shall be made in the same manner as prescribed for other Forest lands (see also FSM 5222). A biological assessment of insect or disease outbreaks that have been detected shall be made as prescribed in FSM 2324.12 and FSM 3431.
2. When controls of insects or disease are necessary within wilderness, they shall be carried out by measures which have the least adverse impact on the wilderness resource. Procedures prescribed in FSM 2324.13 and FSM 5240 will be followed.

## Lake Management

1. Minimize the evidence of man's activities around the lakes and return those showing signs of overuse in a more pristine condition.
2. Managers and wilderness rangers will encourage visitors to practice low impact camping techniques. Efforts will include informing the public of State laws that prohibit contaminating lakes with fish entrails and other refuse.

3. The use of chemical agents such as soap, detergents, and bleaches, whether biodegradable or not, will not be permitted in lakes.

4. Stock will not be tied, corraled, or picketed within 100 feet of a lake, spring, or stream.

Outfitter and Guide Operations

1. An Outfitter Operation Camp Management standard shall be prepared for the outfitter operation at Mollman Lake.

2. Recognize the prerogative of outfitters to retrieve game within the wilderness on day-use basis.

3. Do not issue new special-use permits for outfitter operations until it is determined that additional or new services are needed.

4. Present permits may be transferred and/or reissued only to the current outfitter's son(s).

Air Quality

1. Manage the airshed in the Mission Mountains to meet Class I Air Quality Standards.

2. Where manageable or negotiable, identify and mitigate outside influences. The air quality related values will be identified when a PSD (Prevention of Significant Deterioration) action that may impact the wilderness is received.

Water

1. Monitor water quality to meet or exceed State water quality standards.

2. All project proposals will be analyzed and evaluated to determine the potential water quantity and quality impacts. Mitigation measures will be developed to minimize adverse effects. If the unacceptable effects cannot be adequately mitigated, the project will be redesigned or abandoned.

## Schedule of Management Practices (Average Annual Amount)

No management practices are scheduled.

## Monitoring and Evaluation Requirements

The monitoring requirements from Chapter V that are applicable to this Management Area are: 1, 2, 4, 7, 8, 10, 13, 14, 16-25, 48-50, 53, 54, and 57-59. The procedure outlined in Chapter V will be followed to evaluate the data gathered during monitoring.

TABLE III-1 Management Area Acreage - Flathead National Forest

| MA | Suitable Timber Land | MANAGEMENT AREA ACREAGE W/OUT PROPOSED WILDERNESS | PROPOSED WILDERNESS | TOTAL |
|---|---|---|---|---|
| 1 | No | 41,953 | 916 | 42,869 |
| 2 | No | 17,890 | 44,709 | 62,599 |
| 2A | No | 91,858 | 15,345 | 107,203 |
| 2B | No | 109,025 | 9,054 | 118,079 |
| 2C | No | 8,934 | 0 | 8,934 |
| 2D | No | 526 | 0 | 526 |
| 2E | No | 184 | 0 | 184 |
| 2F | No | 260 | 0 | 260 |
| | | 228,677 | 69,108 | 297,785 |
| 3 | No | 39,862 | 395 | 40,257 |
| 3A | No | 495 | 0 | 495 |
| | | 40,357 | 395 | 40,752 |
| 4 | No | 314 | 0 | 314 |
| 5 | Yes | 3,753 | 0 | 3,753 |
| 7 | Yes | 42,861 | 0 | 42,861 |
| 7A | Yes | 5,934 | 0 | 5,934 |
| | | 48,795 | 0 | 48,795 |
| 8 | Yes | 7,551 | 0 | 7,551 |
| 9 | Yes | 18,812 | 0 | 18,812 |
| 9B | No | 80 | 0 | 80 |
| | | 18,892 | 0 | 18,892 |
| 10 | No | 1,268 | 0 | 1,268 |
| 10A | No | 193 | 0 | 193 |
| | | 1,461 | 0 | 1,461 |
| 11 | No | 69,812 | 0 | 69,812 |
| 11A | No | 17,491 | 9,985 | 27,476 |
| 11B | No | 1,592 | 0 | 1,592 |
| 11C | Yes | 9,852 | 0 | 9,852 |
| | | 98,747 | 9,985 | 108,732 |
| 12 | No | 45,354 | 47 | 45,401 |
| 12A | No | 120 | 0 | 120 |
| | | 45,474 | 47 | 45,521 |

TABLE III-1 (continued)

| MA | Suitable Timber Land | MANAGEMENT AREA ACREAGE | | |
|---|---|---|---|---|
| | | W/OUT PROPOSED WILDERNESS | PROPOSED WILDERNESS | TOTAL |
| 13 | Yes | 26,990 | 212 | 27,202 |
| 13A | No | 13,176 | 0 | 13,176 |
| 13B | No | 142 | 0 | 142 |
| 13C | YES | 738 | 0 | 738 |
| 13D | No | 5,662 | 0 | 5,662 |
| | | 46,708 | 212 | 46,920 |
| 14 | No | 8,020 | 0 | 8,020 |
| 15 | Yes | 491,721 | 983 | 492,704 |
| 15A | Yes | 11,068 | 388 | 11,456 |
| 15B | Yes | 2,054 | 0 | 2,054 |
| 15C | Yes | 8,166 | 0 | 8,166 |
| 15D | Yes | 1,999 | 0 | 1,999 |
| 15E | Yes | 8,900 | 0 | 8,900 |
| | | 523,908 | 1,371 | 525,279 |
| 16 | Yes | 17,089 | 678 | 17,767 |
| 16A | Yes | 1,722 | 0 | 1,722 |
| 16B | Yes | 312 | 0 | 312 |
| 16C | Yes | 443 | 0 | 443 |
| | | 19,566 | 678 | 20,244 |
| 17 | Yes | 10,705 | 0 | 10,705 |
| 18 | No | 13,838 | 0 | 13,838 |
| 19 | No | 0 | 15,368 | 15,368 |
| 20 | No | 3,574 | 0 | 3,574 |
| 21 | No | 996,381 | 0 | 996,381 |
| 22 | No | 73,573 | 0 | 73,573 |
| Total | | 2,232,247 | 98,080 | 2,330,327 |

670,670 = Suitable acreage

# IV. Geographic Units

Geographic Units are briefly described in this chapter in terms of their physical, biological, and social characteristics and historic management activities. These factors influence opportunities for future management activities.

How the goals, objectives, guidelines, and management direction described in Chapters II and III affect specific parts of the Flathead National Forest is displayed for each geographic unit. The array of management direction and activities that will occur within a given area is depicted.

A summary of the future management activities is shown for each geographic unit as approximate acres of timber harvest, approximate miles of road construction, and so on. The actual acres or miles of activity may change as project planning occurs. The activity schedules in Appendix M give further indication of the amount and kind of activities planned for a given geographic unit.

In addition, a summary of the road management direction as it relates to each geographic unit is discussed. Road management is guided by the Flathead Forest road management objectives and standards (Chapter II) and the specific management direction for each Management Area (Chapter III).

Geographic unit maps show the MA's (Management Area) within the unit and those MA's that are suitable for timber harvest.

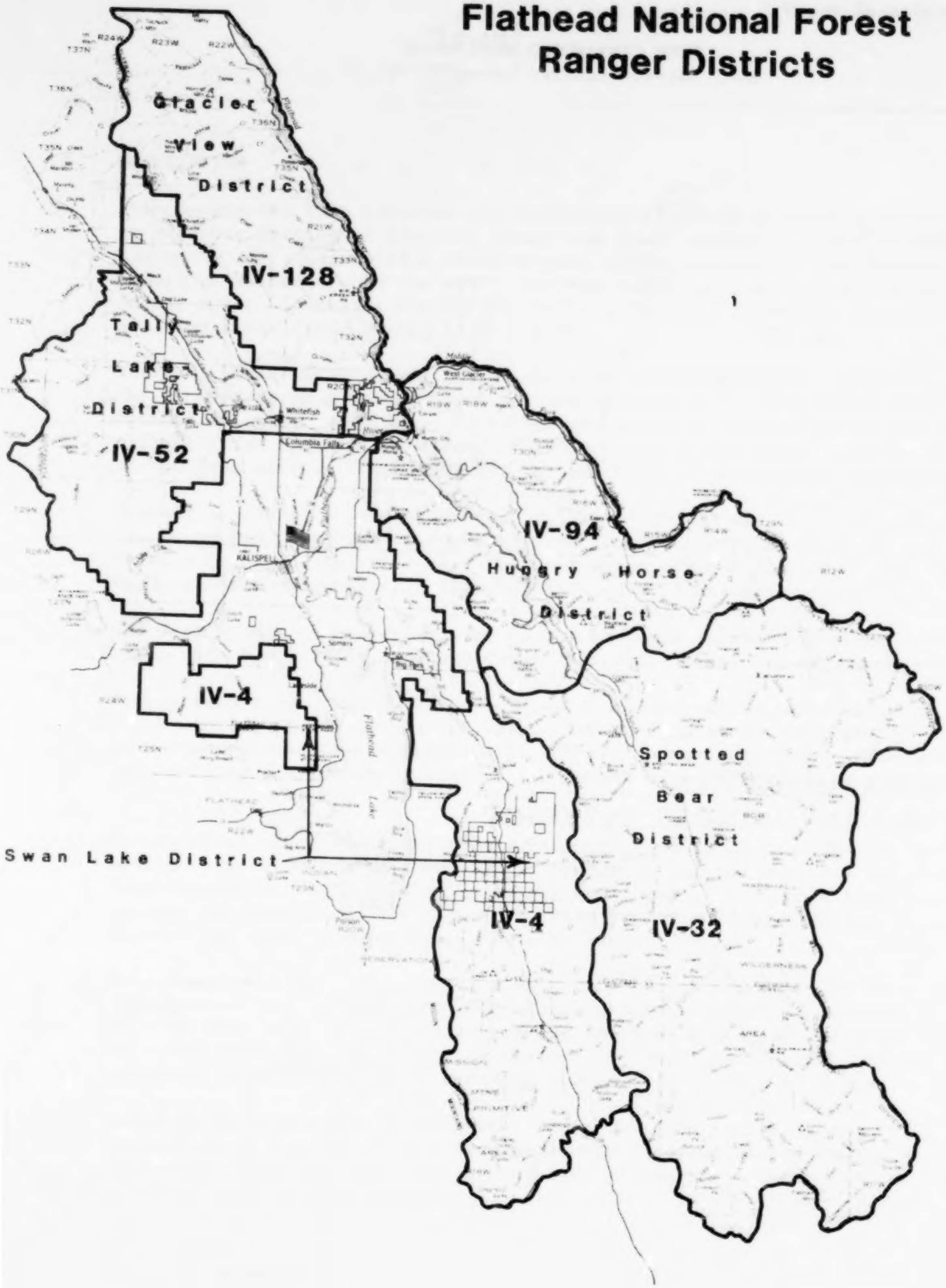
The Flathead National Forest has proposed four additions to the National Wilderness Preservation System. These additions are listed below and shown on the appropriate Geographic Unit maps.

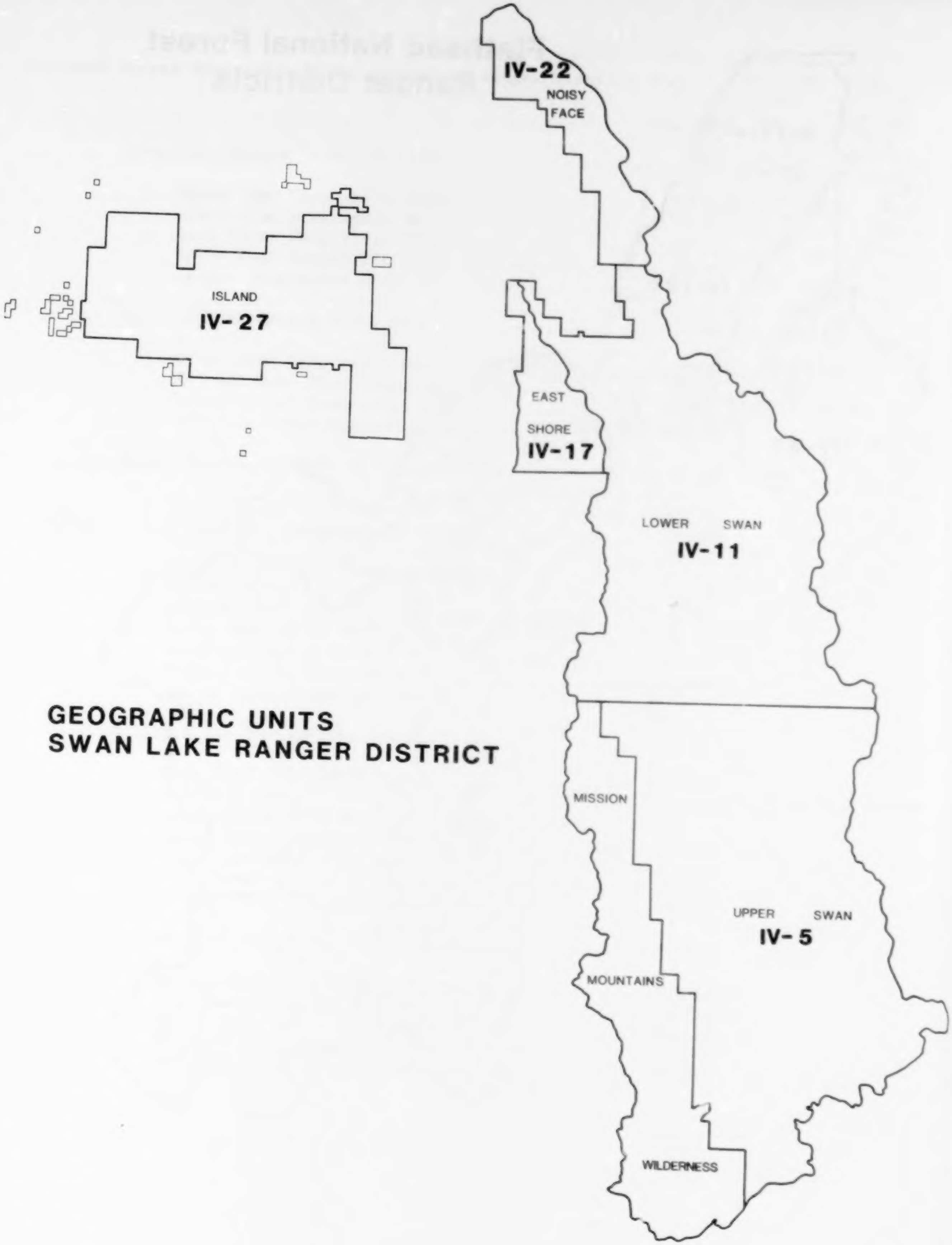
| Wilderness Addition/Geographic Unit | Page |
|---|---|
| Slippery Bill Addition to the Great Bear Wilderness - 6,295 Acres | |
| Bear Creek/Challenge Cabin Geog. Unit | IV-121 |
| Jewel Basin - 31,783 Acres | |
| Lower Swan Geog. Unit | IV-15 |
| Noisy Face Geog. Unit | IV-25 |
| West Side Geog. Unit | IV-99 |
| Swan Front/Bunker Creek Addition to the Bob Marshall Wilderness - 54,815 Acres | |
| Upper Swan Geog. Unit | IV-9 |
| Lower Swan Geog. Unit | IV-15 |
| Bunker Creek Geog. Unit | IV-47 |
| Limestone Cave Addition to the Bob Marshall Wilderness - 5,187 Acres | |
| Spotted Bear Geog Unit | IV-43 |

**Flathead Forest Geographic Units grouped by Ranger District are:**

| | Page Number |
|---|---|
| Swan Lake Ranger District | IV-4 |
| Upper Swan Geographic Unit | IV-5 |
| Lower Swan Geographic Unit | IV-11 |
| East Shore Geographic Unit | IV-17 |
| Noisy Face Geographic Unit | IV-22 |
| Island Geographic Unit | IV-27 |
| Spotted Bear Ranger District | IV-32 |
| South Fork Geographic Unit | IV-33 |
| Spotted Bear River Geographic Unit | IV-39 |
| Bunker Creek Geographic Unit | IV-44 |
| Sullivan Creek Geographic Unit | IV-48 |
| Tally Lake Ranger District | IV-52 |
| Upper Whitefish Geographic Unit | IV-53 |
| Whitefish Geographic Unit | IV-56 |
| Olney-Martin Creek Geographic Unit | IV-60 |
| Upper Good Creek Geographic Unit | IV-64 |
| Sylvia Lake Geographic Unit | IV-68 |
| Star Meadow-Logan Creek Geographic Unit | IV-72 |
| Tally Lake-Round Meadow Geographic Unit | IV-77 |
| Mountain Meadow-Rhodes Draw Geographic Unit | IV-82 |
| Upper Griffin Geographic Unit | IV-86 |
| Ashley Lake Geographic Unit | IV-90 |
| Hungry Horse Ranger District | IV-94 |
| West Side Geographic Unit | IV-95 |
| Columbia Mountain Geographic Unit | IV-100 |
| Lake Five-Desert Mountain Geographic Unit | IV-105 |
| Emery Creek Geographic Unit | IV-110 |
| East Side Geographic Unit | IV-114 |
| Bear Creek-Challenge Cabin Geographic Unit | IV-118 |
| Middle Fork Geographic Unit | IV-123 |
| Glacier View Ranger District | IV-128 |
| Canyon-Teakettle Geographic Unit | IV-129 |
| Big Creek Geographic Unit | IV-135 |
| North Fork Valley Geographic Unit | IV-140 |
| Whale-Coal Geographic Unit | IV-144 |
| Trail Creek Geographic Unit | IV-148 |

# Flathead National Forest Ranger Districts


Glacier View District
IV-128
Tally Lake District
IV-52
Whitefish
Columbia Falls
West Glacier
KALISPELL
IV-94
Hungry Horse District
IV-4
Flathead Lake
Swan Lake District
IV-4
Spotted Bear District
IV-32
WILDERNESS
AREA


IV-22
NOISY FACE
ISLAND
IV-27
EAST SHORE
IV-17
LOWER SWAN
IV-11
MISSION
MOUNTAINS
WILDERNESS
UPPER SWAN
IV-5

# GEOGRAPHIC UNITS
# SWAN LAKE RANGER DISTRICT

# UPPER SWAN GEOGRAPHIC UNIT
99,300 Acres of National Forest Land

---

## A. DESCRIPTION

This Geographic Unit includes the headwaters of the Swan River and is located in a remote portion of Missoula County and Lake County. It lies southeast of Kalispell and consists of a 12-mile wide valley bordered by the Mission Mountains Wilderness to the west, the Swan Range and Bob Marshall Wilderness to the east, Clearwater Divide and the Lolo National Forest to the south, and the Swan River State Forest to the north.

National Forest System land is intermingled with Plum Creek Timber Company, Inc., property in a checkerboard pattern that occurs in the valley bottom and extends into the foothills. These private lands are extensive and are managed primarily for timber production. Small private landholdings align both sides of the Swan River. These are used for ranching or residential purposes.

Terrain is characterized by a broad valley floor and the foothills and steep slopes of two prominent mountain ranges: the Swan Range to the east and the Mission Mountains to the west. The Swan River bisects the unit. The Swan Highway (State Highway #83) lies within 1 mile of the river on the east side.

The best stands of ponderosa pine on the Flathead Forest are in this unit, along with Douglas-fir, western larch, lodgepole pine, and Engelmann spruce.

Precipitation for this Unit is moderate along the valley and high on mountain tops; ranging 28-100 inches per year. Snowfall accounts for about 65 percent of the precipitation and ranges from 200-800 inches each year. Winter temperatures are low and average 4°F. Summer highs are warm, averaging 82°F.

About 75% of the whitetailed deer winter range on the Forest is located on the gentle terrain at the northern end of the unit. At the southern end, on the Swan-Clearwater Divide, is an areas used by grizzly bears as a travel corridor between the Mission Mountains and the Swan Mountain Range. Mountain goats inhabit the upper elevations of the Swan Range.

This Geographic Unit encompasses a community called Condon. The unit is characterized by relative isolation from an urban center; it is about 65 miles south of Kalispell and 70 miles east and north of Missoula. Residents emphasize that they can step from their back doors in the valley bottom and walk into wilderness without crossing pavement.

Although the population of this area has grown, the influx of people is controlled by limited private land available for subdivision and by a lack of employment opportunities. The picturesque slopes of the two mountain ranges are seen from the Swan Highway.

Holland Lake, Lindbergh Lake, and trailheads to the Mission Mountains and the Bob Marshall Wildernesses draw a large number of recreationists to the area. Many of these people come from Missoula and communities east of the Continental Divide. Principal recreation uses of the unit are hunting, berrypicking, snowmobiling, and fishing. A few wilderness outfitters have camps in the Holland Lake area. Hikers use roads and trails in the unit to reach the wildernesses. There is a large developed recreation campground and picnic area at Holland Lake, a resort, and several private recreation residences operating under special-use permits. A smaller, more primitive site is located at Lindbergh Lake.

## B. HISTORIC MANAGEMENT ACTIVITIES

Timber harvesting has taken place during the past 20 years in this Geographic Unit, with the most gentle terrain being logged first. Practically all arterial and collector roads on the transportation system have been constructed. Remaining construction will involve local roads.

Extensive timber harvesting has impacted the whitetailed deer winter ranges by reducing the available thermal cover. To date, winter range management has primarily involved mitigation measures associated with the timber harvest activities. Extensive harvest of the winter range on private lands has increased the significance of winter ranges located on National Forest System lands.

Domestic livestock grazing allotments have been provided in the valley on National Forest System lands intermingled with private lands.

This Geographic Unit has generally been managed for modification and maximum modification VQO's (visual quality objective). A visual corridor has been maintained along the Swan Valley Highway that screens timber management activities. The Swan Valley Highway Landscape Management Plan was implemented in 1979 by a Memorandum of Understanding aimed at maintaining the scenic qualities adjacent to the Swan Valley Highway (State Highway #83). The agreement was signed by Burlington Northern Inc. Division of Forestry, D.N.R.C., Montana Department of Highways, and the Lolo and Flathead National Forests. Small areas along the Swan Highway and in the vicinity of Holland Lake were managed to meet retention or partial retention VQO's.

Developed recreation management maintained the Holland Lake recreation site at near the full-service level. The site has been well used. The Holland-Gordon Trail and the Smith Pass Trail receive high volumes of general public and outfitted public use and are the focus of this unit's trail maintenance efforts. Maintenance of trails and trailheads for the Mission Mountain Wilderness has been complicated by the intermingled ownership, timber harvest, and road construction activities.

East Holland Connector Trail and Holland-Gordon Trail have been closed to all motor vehicles. Numerous road and area seasonal closures and restrictions have been designed to protect wildlife, particularly whitetailed deer, and provide backcountry hunting opportunities.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide Standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- In accordance with the agreement between the Montana Department of Fish, Wildlife, and Parks, Swan State Forest, Plum Creek Timber Co., Inc., and the Flathead National Forest, road use will be restricted on the east side of Highway 83 from the north end of the Geographic Unit, south to the Forest boundary, and on the west side of Highway 83 from the Cold Creek road south to the Forest boundary. Road use will be limited during the fall big-game season (October 15 to November 30) to provide a spectrum of hunting opportunities.

-- Management Area 15C - To allow whitetailed deer optimum dispersal and use of summer range, apply year-round motorized road access restrictions to local roads; however, snowmobile use is permitted.

-- Management Area 13 - As necessary to provide mule deer and elk undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15.

-- Year-round closures will be continued on those cost share roads agreed to with Plum Creek Timber Company, Inc.

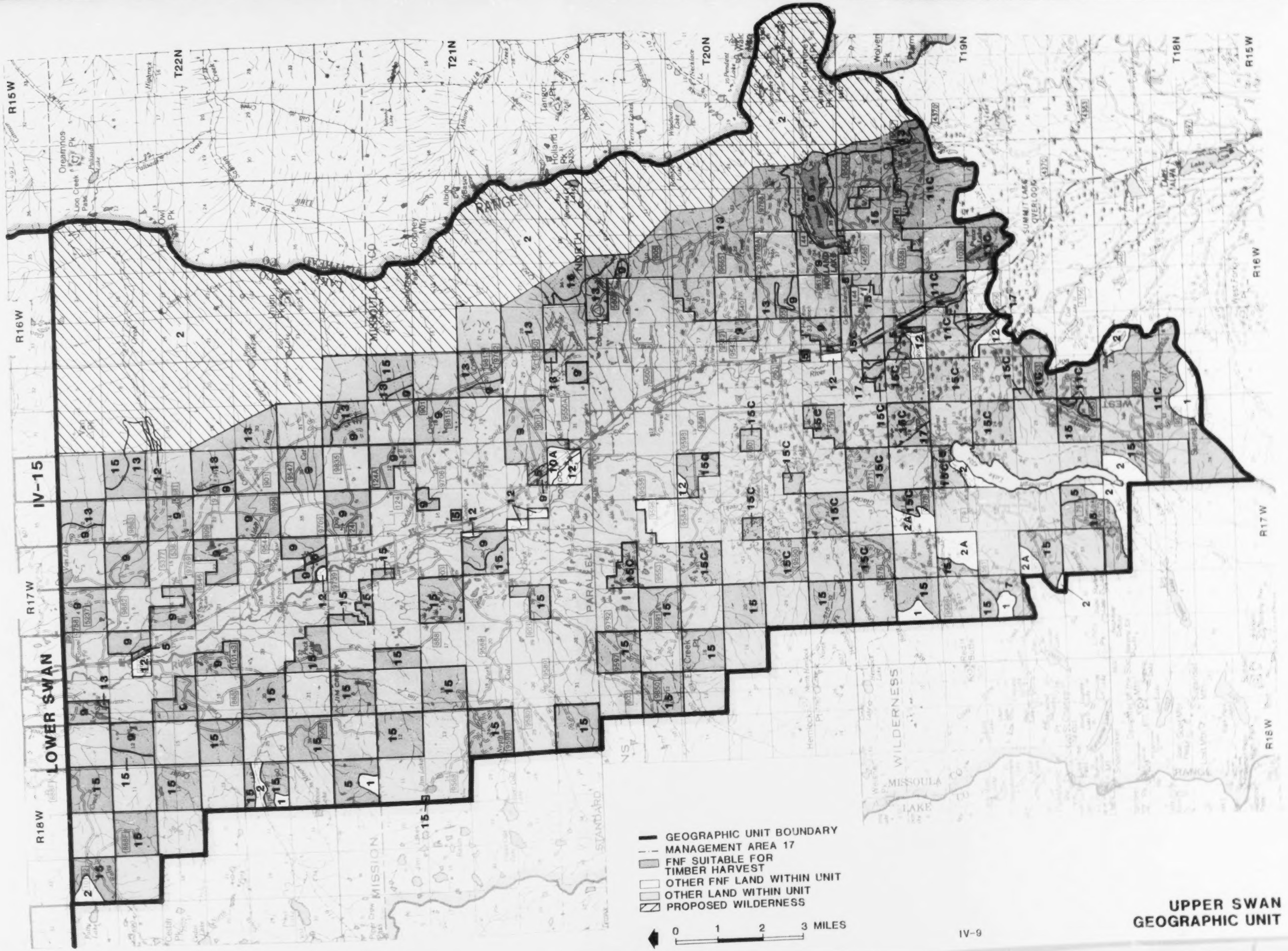
-- Management Area 9 - As necessary to provide whitetailed deer undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15 except where roads are needed for motorized access to private lands or for logging activity.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Upper Swan Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 1 | Maintain present conditions with minimal investment for resource activities. | None Specified |
| 2 | Provide for a variety of primitive dispersed recreation opportunities. | Retention |
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 5 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, are not evident. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 9 | Provide cover and forage areas suitable for whitetailed deer winter habitat. | Partial Retention |
| 10A | Administrative site | None Specified |
| 11C | Provide a secure grizzly bear travel route through vegetative manipulation. | Modification |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 15C | Emphasize cost-effective timber production with roads and special consideration for whitetailed deer summer range. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
PROPOSED WILDERNESS
0 1 2 3 MILES
LOWER SWAN
IV-15
T22N
T21N
T20N
T19N
T18N
R15W
R16W
R17W
R18W
WILDERNESS
MISSOULA CO
LAKE CO
MISSION
STANDARD PARALLEL NORTH
SUMMIT LAKE OVERLOOK

## UPPER SWAN GEOGRAPHIC UNIT

# LOWER SWAN GEOGRAPHIC UNIT

87,300 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located in the north half of the Swan River drainage in Lake County. It lies southeast of Kalispell and is bordered by the Mission Mountains Range to the west, the Swan Range to the east, private land to the north (near the north end of Swan Lake), and the southern portion of the Swan River State Forest to the south.

The south half of the unit includes the Swan River State Forest and is an area of checkerboard ownership primarily involving National Forest System, State of Montana, and Plum Creek Timber Company, Inc., land.

A broad valley floor exists in the southern part of the unit. This gradually narrows to the north. At the southern tip of Swan Lake, at the north end of the Geographic Unit, steep slopes adjoin the lake from the east and west.

Western white pine, Engelmann spruce, western larch, Douglas-fir, and lodgepole pine are the major tree species.

Yearly rainfall of this area is 25 inches along the river and 80 inches along mountain tops. More than half of this falls as snow resulting in total snowfall of 200-800 inches. Temperatures range from average lows of 6°F in winter to average highs of 82°F in summer.

Upper elevations in the Swan Range support a small population of mountain goats. Whitetailed deer winter range is located at the south end of the unit. A U.S. Fish and Wildlife Service refuge is located at the southern end of Swan Lake, providing habitat for waterfowl.

The small community of Swan Lake is located in this Geographic Unit on the east shore of Swan Lake. Many recreational homes rim the north and east shores. This area is more densely settled than the Condon area to the south. Much of the available private land has been subdivided into tracts primarily for recreational use. Swan Lake is located close enough to the Flathead Valley for some residents to commute into Bigfork or even Kalispell for work.

The economy of Swan Lake is based almost solely on the trade and service industries which have developed to meet the immmediate needs of area residents and recreationists.

Visual significance of this Geographic Unit, particularly the northern half, is high. The Swan Highway provides views of both the Swan Range and the Mission Mountains Range.

Primary recreation uses of this unit include hunting, berrypicking, and fishing. Firewood gathering is an important use of National Forest resources. The southeast boundary of the unit lies adjacent to the Bob Marshall Wilderness, and access to Inspiration Creek in the wilderness is provided from Napa Point. Several other trails access high elevation lakes in the Swan Range. Swan Peak, a well-known landmark in the Swan Range, is located inthis area. The Swan Lake campground and picnic ground is a developed recreation site. Access for the physically handicapped is provided.

## B. HISTORIC MANAGEMENT ACTIVITIES

The first major timber sale on the Flathead Forest was in the vicinity of Bond Creek in 1913; however, extensive logging did not begin until the 1960's. Generally, logging has occurred in the lower elevations. Arterial and collector roads needed to complete the transportation system have been constructed. Only local roads accessing timber stands remain to be constructed.

The slopes west of Swan Lake and surrounding Hall Creek just north of the community of Swan Lake have been managed for partial retention and modification VQO's (visual quality objective). A visual corridor has been maintained along the Swan Valley Highway that screens timber management activities. The Swan Valley Highway Landscape Management Plan was implemented in 1979 by a Memorandum of Understanding aimed at maintaining the scenic qualities adjacent to the Swan Valley Highway (State Highway #83). The agreement was signed by Burlington Northern Inc., Division of Forestry, D.N.R.C., Montana Department of Highways, and the Lolo and Flathead National Forests. The rest of the unit is allowed to meet a modification or maximum modification VQO.

Developed recreation management has highlighted the Swan Lake Campground and picnic area, providing full-service levels of management. Dispersed recreation management has focused on the Swan Range and the trails accessing the alpine lakes east of Swan Lake.

Two roads in the South Fork of Lost Creek and Goat Creek have been closed to motor vehicles except snowmobiles during the winter to protect grizzly bears from disturbance. Motor vehicles have been restricted to designated roads in the vicinity of the North Fork of Lost Creek and also the Goat Creek-Squeezer Creek areas during hunting season.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- In accordance with the agreement between the Montana Department of Fish, Wildlife and Parks, Swan State Forest, Plum Creek Timber Company, Inc., and the Flathead National Forest road use will be restricted in the Bond Foothills, Bear Creek, and the Swan State Forest areas during the fall big game season (October 15 to November 30) to provide a spectrum of hunting opportunities.

-- Apply motorized access restrictions in Management Area 13 from December 1 to May 15 as necessary to provide mule deer and elk undisturbed use of winter range.

-- Restrict motorized access in Management Area 15 along Upper Porcupine and Whitetail drainages as necessary to provide for elk summer range.

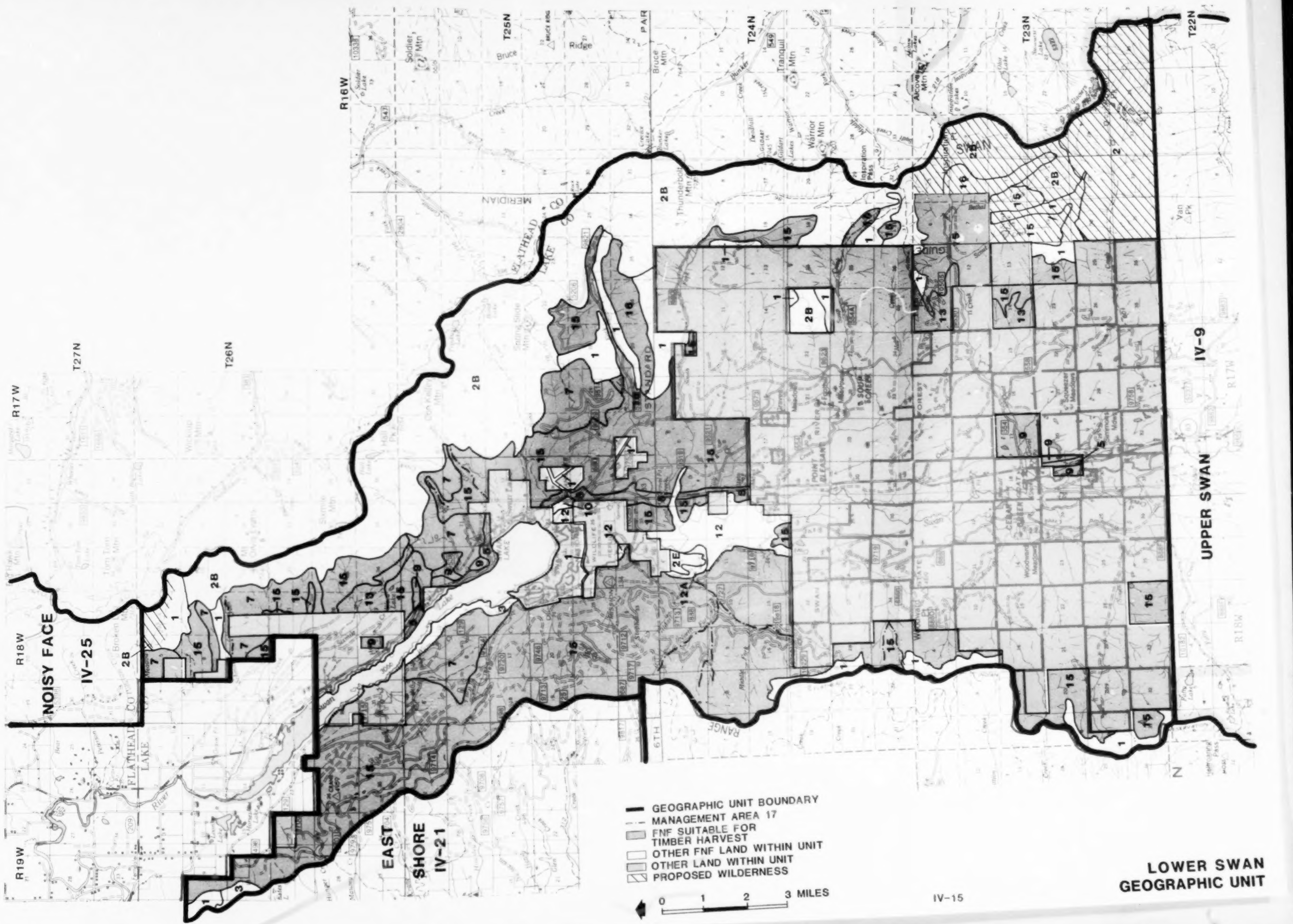
-- Apply no other motorized access restrictions in this Geographic Unit except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

### 2. SUMMARY OF MANAGEMENT AREAS

The Lower Swan Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The tabulation on the following page, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

SLRD
Lower Swan Geog. Unit

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 1 | Maintain present conditions with minimal investment for resource activities. | None Specified |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 2E | Allow natural vegetative changes to occur with minimum interference. Area has been recommended for RNA designation. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 5 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, are not evident. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 9 | Provide cover and forage areas suitable for whitetailed deer winter habitat. | Partial Retentio |
| 10 | Administrative site. | None Specified |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retentio |
| 12A | Allow natural vegetative changes to occur with minimum interference. Area has been recommended for RNA designation. | Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modificati |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modificati |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


NOISY FACE
IV-25
EAST SHORE
IV-21
UPPER SWAN
IV-9
R19W
R18W
R17W
R16W
T27N
T26N
T25N
T24N
T23N
T22N
FLATHEAD LAKE CO
MERIDIAN
6TH RANGE
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
PROPOSED WILDERNESS
0 1 2 3 MILES
N

## LOWER SWAN GEOGRAPHIC UNIT

## EAST SHORE GEOGRAPHIC UNIT

16,400 Acres of National Forest System Land

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### A. DESCRIPTION

This Geographic Unit is located southeast of Kalispell on the east side of Flathead Lake. It lies between the top of Crane Mountain on the north end of the Mission Mountain Range and a half-mile wide strip of private land adjacent to Flathead Lake. One isolated parcel of National Forest System land adjoins the lake. The Flathead Indian Reservation forms the southern boundary for this unit. All of this Geographic Unit is in Lake County. There is no mixed landownership within the unit.

All of the surface water of the East Shore Geographic Unit drains into Flathead Lake. Most of the streams flow only during spring runoff. During low flow periods, the water sinks into the ground before reaching the lake. Elevations range from approximately 6,000 feet at the top of the unit to 3,000 feet at the bottom. Highway 35 is located between Flathead Lake and the Geographic Unit. Terrain is gentle at the top and bottom of the unit and steep in the middle. The northern part of the unit is characterized by rugged rocky terrain and shallow soils.

Subalpine fir and Engelmann Spruce are common near the higher elevations. Western larch, Douglas-fir, and lodgepole pine are found at all elevations. Ponderosa pine and grand fir also exist.

Average annual precipitation of the area ranges from 25 inches near Flathead Lake to 60 inches at the top of the Mission Mountains. About 60 percent of the precipitation falls as snow resulting in snowfall averaging 100 inches at the lake to 400 inches at the top of the unit each year. Average winter lows are about $10^{\circ}$F. Average summer highs are about $84^{\circ}$F.

There are no towns near the unit, but numerous private landowners inhabit the area near Flathead Lake and Highway 35. The recreational orientation of these landowners is toward the lake; however, they perceive the National Forest System lands as a critical component of their environment because many of the watersheds provide water used for domestic purposes as well as for irrigation.

The economy of the East Shore Geographic Unit is primarily agriculture and tourism oriented. The area supports numerous cherry orchards. Other fruits are also raised in the favorable lake-influenced climate.

The east shore of the lake is populated with recreational residences and several resorts. Population in the summer significantly increases over the winter population. Many residents in the area are retired.

The visual significance of the East Shore Geographic Unit is high. Unobstructed views of the area are provided from the lower Flathead Valley, the west shore of the lake, Highway 93, and from Flathead Lake itself. Although not visually spectacular, the area is one of the most visually sensitive areas on the Flathead Forest because much of it is seen as the backdrop for the northeast half of Flathead Lake by large numbers of people.

Because of the private land bordering the lower elevations and generally limited access, the area receives limited recreational use. Access is from the north and east, not the west faces of the area. The lower elevations and southern portion of this unit are accessible only by foot. Firewood gathering and recreation use occur in the roaded northern upper elevations of the unit. Hunting, berrypicking, and snowmobiling are the most popular forms of recreation.

Water in this Geographic Unit is used for domestic purposes, livestock, and irrigation. Several streams are used, unfiltered, as domestic water supplies.

## B. HISTORIC MANAGEMENT ACTIVITIES

Much of the upper elevation's relatively gentle slopes have been roaded and logged; however, the lower two-thirds of the unit--the steep faces above Flathead Lake--have not been logged except for removal of blowdown timber. Past management direction specified additional road construction and timber harvest meeting visual quality constraints on the visible middle elevations, and timber harvest without roads meeting visual quality constraints for the lower elevations of the unit.

Seven trails provide access from Highway 35 to the top of Crane Mountain. The trailheads are located on private land. These trails were originally built for control of wildfires and have been infrequently maintained because of light public use. There are two developed recreation sites along Highway 35 - Bear Dance and Flathead Campgrounds. Bear Dance has been closed to public use because of high maintenance costs and limited public use. For similar reasons, Flathead Campground has been closed and may be used by request only.

Except for the moderate to gentle upper slopes, the unit is unroaded. A logging feasibility study completed in 1982 developed alternatives for roading and logging the midslope zone. Road construction has not been proposed for the lower elevation.

There have been no road, trail, or area closures in the Geographic Unit.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- Management Area 7 - As roads are constructed and logging occurs, there may be reason to restrict motorized access to help prevent degradation of public water supplies.

-- Restrict motorized access as necessary to provide for elk summer habitat.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

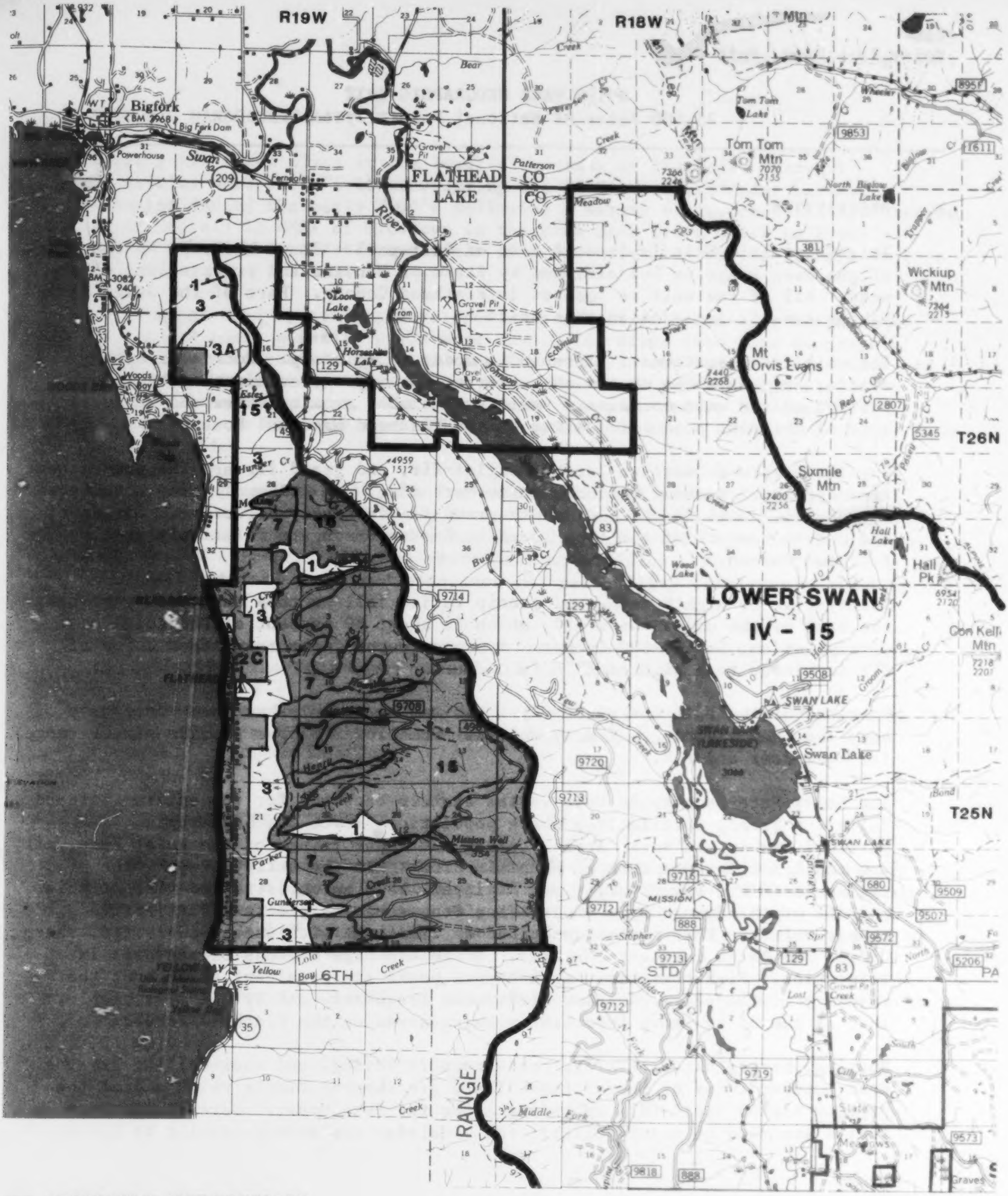
### 2. SUMMARY OF INSECT AND DISEASE MANAGEMENT

Of the approximate 145 MMBF of standing mature volume in the geographic area, 54 MMBF is LP (lodgepole pine) in a high risk condition for Mountain Pine Beetle attack and mortality. Due to the age class and size of the LP, a significant portion of this LP (37 MMBF) is expected to be killed during a 10-year period if the MPB infestation becomes epidemic. The current infestation in the area is considered endemic; however, this could easily become epidemic in view of the massive infestation currently on-going to the west of the Flathead Lake in the Island Geographic Unit. State of the art techniques will be evaluated for use on a project level to deal with the MPB situation in the Geographic Area during this decade.

## 4. SUMMARY OF MANAGEMENT AREAS

The East Shore Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 1 | Maintain present conditions with minimal investment for resource activities. | None Specified |
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 3A | Allow natural vegetative changes to occur with minimum interference. Area has been recommended for RNA designation. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R19W
R18W
Bigfork
Big Fork Dam
Powerhouse
Swan River
209
FLATHEAD CO
LAKE CO
Meadow
Bear
Patterson
Tom Tom Lake
Tom Tom Mtn
North Bigelow Lake
Wickiup Mtn
Mt Orvis Evans
Loon Lake
Horseshoe Lake
Gravel Pit
Woods Bay
Estes
Hunger Cr
Sixmile Mtn
Hall Lake
Hall Pk
T26N
83
LOWER SWAN
IV - 15
Con Kelly Mtn
SWAN LAKE
Swan Lake
Yew Creek
Henry Creek
Mission Well
Parker
Gunderson
MISSION
T25N
Yellow Bay
6TH
Lola Creek
35
RANGE
Middle Fork
Meadows
Graves
1
3
3A
15
7
2C
9714
9708
9720
9713
9716
9712
9719
9818
888
9713
129
9508
9509
9507
9572
5206
9573
9853
1611
8951
381
2807
5345
680

GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

**EAST SHORE**
**GEOGRAPHIC UNIT**

## NOISY FACE GEOGRAPHIC UNIT
25,500 Acres of National Forest System Land

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### A. DESCRIPTION

This Geographic Unit is located east of Kalispell. It is bordered by the crest of the Swan Range on the east and by State of Montana and private land on the west. All of the unit is located in Flathead County. Part of the Jewel Basin Hiking Area is included in this unit.

The unit faces southwest. Terrain is moderate to steep. Rock outcrops, cliffs, and avalanche chutes characterize the upper elevations. The lower portion of the unit contains a variety of timber growing sites and includes some of the most productive sites on the Flathead National Forest.

Engelmann spruce, western larch, Douglas-fir, and grand fir are the predominant tree species. Western hemlock, white-bark pine, and lodgepole pine are minor components. Much of the old growth grand fir is highly defective. Stands of old growth hemlock of the type found in Krause Basin are relatively rare on the Flathead Forest.

Twenty-five to eighty inches of precipitation fall on this unit each year near the base of the unit. Snowfall, which is about 60 percent of the total precipitation, is 100-600 inches. Average temperatures range from a low of $8^{o}$F in winter to a high of $83^{o}$F in summer.

Portions of the Unit are regularly inhabited by grizzly bear and there have been reported sightings of gray wolves. Some lower slopes provide winter range for mule deer and elk.

The Noisy Face Geographic Unit is the eastern backdrop for the entire Flathead Valley, a broad, fertile area where population growth has been rapid, particularly in the rural areas. Along the lower fringe of the Noisy Face Unit are small settlements such as Mountain Brook. In the valley proper, the residents of the lower valley and Kalispell have an unobstructed view of this portion of the Swan Range. Noisy Face Geographic Unit offers distinctive scenic values. They may be described as landforms with steep, dissected, sharp ridges and large dominant features. There are high degrees of patterns in vegetation. High elevation, snow-capped peaks are prominent throughout the majority of the year. Because it is seen frequently and by the most people, this is one of the most important viewing areas on the Flathead Forest.

Hunting, berrypicking, hiking, cross-country skiing, and snowmobiling are the most popular forms of recreation. There are several trails which access the popular Alpine Trail (#7) extending along the Swan Crest. Several of these trails are used by motorcyclists; the remainder are used primarily by hikers.

## B. HISTORIC MANAGEMENT ACTIVITIES

Logging has taken place in the lower elevations of the Unit. Harvest activities were first initiated during the 1940's. Significant harvest occurred during the early 1960's following a severe windstorm which resulted in approximately 15 MMBF of blowdown in the area from Olson Creek to Brown's Gulch. The Peterson-Patterson Creek area was harvested during the mid to late 60's.

The present road system was developed as a result of harvesting activities. Only a few roads actually probe more than a few miles into this Geographic Unit. However, road densities in the Krause Basin and Peters Ridge areas are high, and several roads from Hungry Horse Reservoir provide high elevation access to the Swan Crest. The Noisy Creek Road, an access to Jewel Basin Hiking Area, is the only road which approaches the crest of the Swan Range from the west side.

There are approximately 40 miles of existing Forest system roads in this Geographic Unit and an unknown number of abandoned roads unaccounted for on current maps. These abandoned roads and old skid trails have developed into popular ORV (Off-Road Vehicle) routes for motorcycles. Motorcyclists have held an annual off-road motorized endurance and reliability trials event each spring for a number of years.

Trail maintenance has focused on those trails that are popular routes to the Alpine Trail. The Strawberry Lake Trail receives heavy use.

Roads in the Bear Creek area have been closed to public motorized access to provide wildlife security. There have been no other road, trail, or area closures.

## C. FUTURE MANAGEMENT ACTIVITIES

The objective of future management activities is to continue to provide for the mix of activities presently occuring in the area. Coordination will be done with the various user groups and only those restrictions necessary will be implemented. Timber harvest and roadbuilding during the first decade will be approached in a conservative manner.

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

## 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- Management Area 13C - Apply motorized access restrictions from December 1 to May 15 to provide mule deer and elk undisturbed use of winter range.

-- Continue year-round closure of the Bear Creek Road.

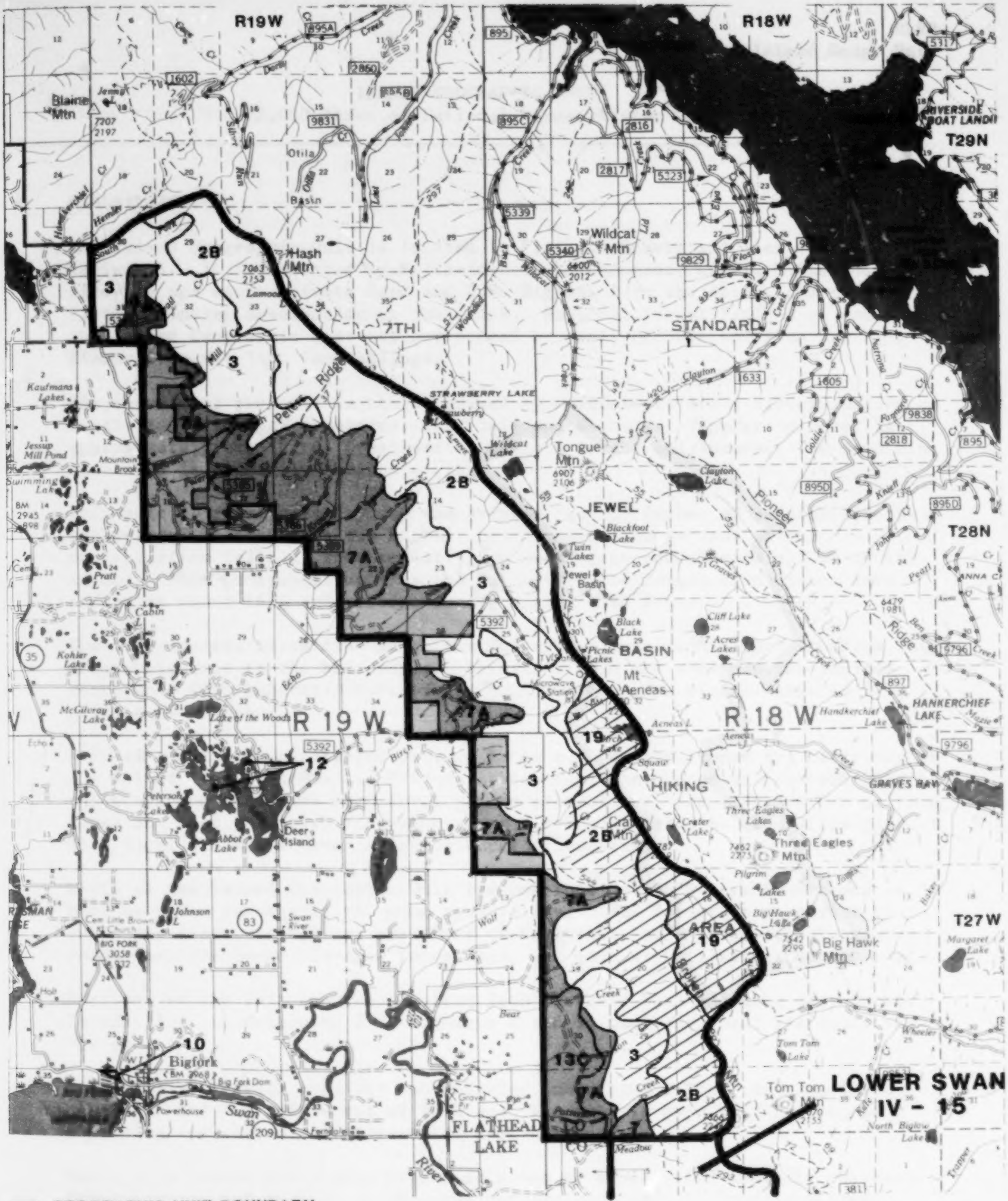
The Forest will develop and implement ORV and road management direction that provides adequate security for the grizzly bear but continues to provide reasonable access for motorized recreational use.

The annual off-road motorized endurance and reliability trials event will not be authorized prior to June 15.

## 2. SUMMARY OF MANAGEMENT AREAS

The Noisy Face Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 7, 7A | Maintain a pleasing, natural appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13C | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Partial Retention |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |
| 19 | Manage for hiking activities | Retention |


R19W
R18W
T29N
T28N
T27W
RIVERSIDE BOAT LANDING
Blaine Mtn
7207 2197
Otila Basin
Hash Mtn
7063 2153
Wildcat Mtn
6600 2012
7TH
STANDARD
2B
3
Mill
Peters Ridge
STRAWBERRY LAKE
Strawberry
Wildcat Lake
Tongue Mtn
6907 2106
JEWEL
Blackfoot Lake
Clayton Lake
Pioneer
Kaufmans Lakes
Jessup Mill Pond
Mountain Brook
Swimming Lake
BM 2945 898
7A
Pratt L
Twin Lakes
Jewel Basin
Black Lake
Cliff Lake
7 Acres Lakes
Picnic Lakes
BASIN
Mt Aeneas
Cabin
Kohler Lake
McGilvray Lake
Lake of the Woods
R 19 W
R 18 W
Handkerchief Lake
HANKERCHIEF LAKE
12
Peterson Lake
Abbot Lake
Deer Island
19
Birch Lake
Squaw L
HIKING
Crater Lake
Three Eagles Lakes
Three Eagles Mtn
7462 2275
Pilgrim Lakes
Big Hawk Lake
Big Hawk Mtn
7542 2299
GRAVES BAY
Johnson L
Swan River
BIG FORK 3058 932
AREA 19
Margaret Lake
Wolf
Bear
Tom Tom Lake
10
Bigfork
Powerhouse
Swan
13C
Tom Tom Mtn
7270 2155
North Biglow Lake
FLATHEAD LAKE
CO
Meadow
LOWER SWAN
IV - 15

▬ GEOGRAPHIC UNIT BOUNDARY

-·- MANAGEMENT AREA 17

▨ FNF SUITABLE FOR TIMBER HARVEST

☐ OTHER FNF LAND WITHIN UNIT

▨ OTHER LAND WITHIN UNIT

▧ PROPOSED WILDERNESS

0 1 2 3 MILES

## NOISY FACE GEOGRAPHIC UNIT

# ISLAND GEOGRAPHIC UNIT

52,000 Acres of National Forest System Land

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## A. DESCRIPTION

The Island Geographic Unit is located in Flathead County and lies southwest of Kalispell. It is bordered by Flathead Lake to the east, Little Bitterroot River to the west, private land and U.S. Highway 2 to the north, and the Flathead Indian Reservation to the south. National Forest lands that comprise the Island Geographic Unit are surrounded by small private and Plum Creek Timber Company, Inc. landholdings.

The terrain of the unit is characterized by moderate-to-steep slopes leading up to the two principal mountains: Blacktail and Haskill. Vegetative cover is approximately two-thirds Douglas-fir, western larch, and spruce. The remaining one-third is primarily lodgepole pine.

This unit is relatively dry; on the average only 18 inches of rainfall in the valleys and 31 inches on the highest peaks. About 50 percent of the precipitation falls as snow resulting in an average annual snowfall of 50-150 inches. This geographic unit is the warmest on the Forest with winter lows averaging about 16°F and average summer highs of 86°F.

The only species classified under the Endangered Species Act that inhabits this Geographic Unit is the bald eagle. Streams within the area provide limited year-round fish habitat. Most of the suitable big-game winter range is in private ownership.

Several small communities and private lands are located around the periphery of the Island Geographic Unit. Private lands along the shores of Flathead Lake to the south and east have been developed as recreational property. Other private lands are used primarily for ranching or farming operations. The lifestyles of most local residents have an agricultural orientation.

North of the Island Geographic Unit are numerous 5- to 20-acre homesteads as well as a few ranches in the more open valleys. The Forest is perceived by local residents, as well as residents of Kalispell, as a reservoir of useable resources. Firewood, forage, house logs, and game are all harvested and used.

Portions of the Unit are readily seen from Flathead Lake and Lake Mary Ronan. In addition, travelers on U.S. Highways 2 and 93 and many local residents view the area.

Principal recreation uses are snowmobiling, motorbike riding, driving for pleasure, and limited amount of fishing. The area is popular for firewood gathering and grouse and whitetailed deer hunting.

Water from Stoner and Truman Creeks is known to be used for domestic purposes. Other streams and springs in the area may also be used for these purposes.

## B. HISTORIC MANAGEMENT ACTIVITIES

Extensive timber harvesting and cattle grazing have taken place in the Island Geographic Unit. The majority of the unit has been managed to emphasize timber production. Eight domestic livestock allotments have been established to utilize the area's transitory range.

Past management direction for the Island Geographic Unit identified few areas where the visual quality of the landscape met retention or partial retention visual quality objectives. The majority of the area rated moderate to low in visual significance.

The physical characteristics of the area and the extensive road system made the Island Geographic Unit primarily suited to those activities that involve motorized vehicle access and/or recreation. A National ORV trail has been designated. There have been no maintained hiking trails in the area.

Special uses provided on the National Forest have included radio and television communication equipment on Blacktail Mountain. In addition, there are other communication facilities on Blacktail Mountain which are covered by a Memorandum of Understanding with other Government agencies.

Four areas have been closed to motorized vehicle traffic during the general hunting season. These areas were selected because they are excellent game habitat and could be temporarily restricted while affording hunters reasonable access.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Apply year-round or seasonal motorized road access restrictions to those areas where suitable cover for whitetailed deer is negatively affected due to the accelerated harvest of mountain pine beetle infected lodgepole pine.

-- In four areas (South Haskill, Wild Bill, Blacktail, and Lakeside) roads will be closed to public motorized use from October 15 to November 30 to provide a spectrum of whitetailed deer hunting opportunities.

-- Management Areas 9 - If necessary to provide whitetailed deer undisturbed use of winter range, apply motorized access restrictions December 1 to May 15 except where roads are needed for motorized access to private lands or for logging activity.

-- Management Areas 13 - If necessary to provide mule deer and elk undisturbed use of winter range, apply motorized road access restrictions December 1 to May 15.

-- In the Blacktail Mountain area, if necessary to provide moose secure use of habitat, apply year-round motorized road access restrictions.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

Generally, the unrestricted road density will be 2 to 3.2 miles per section.

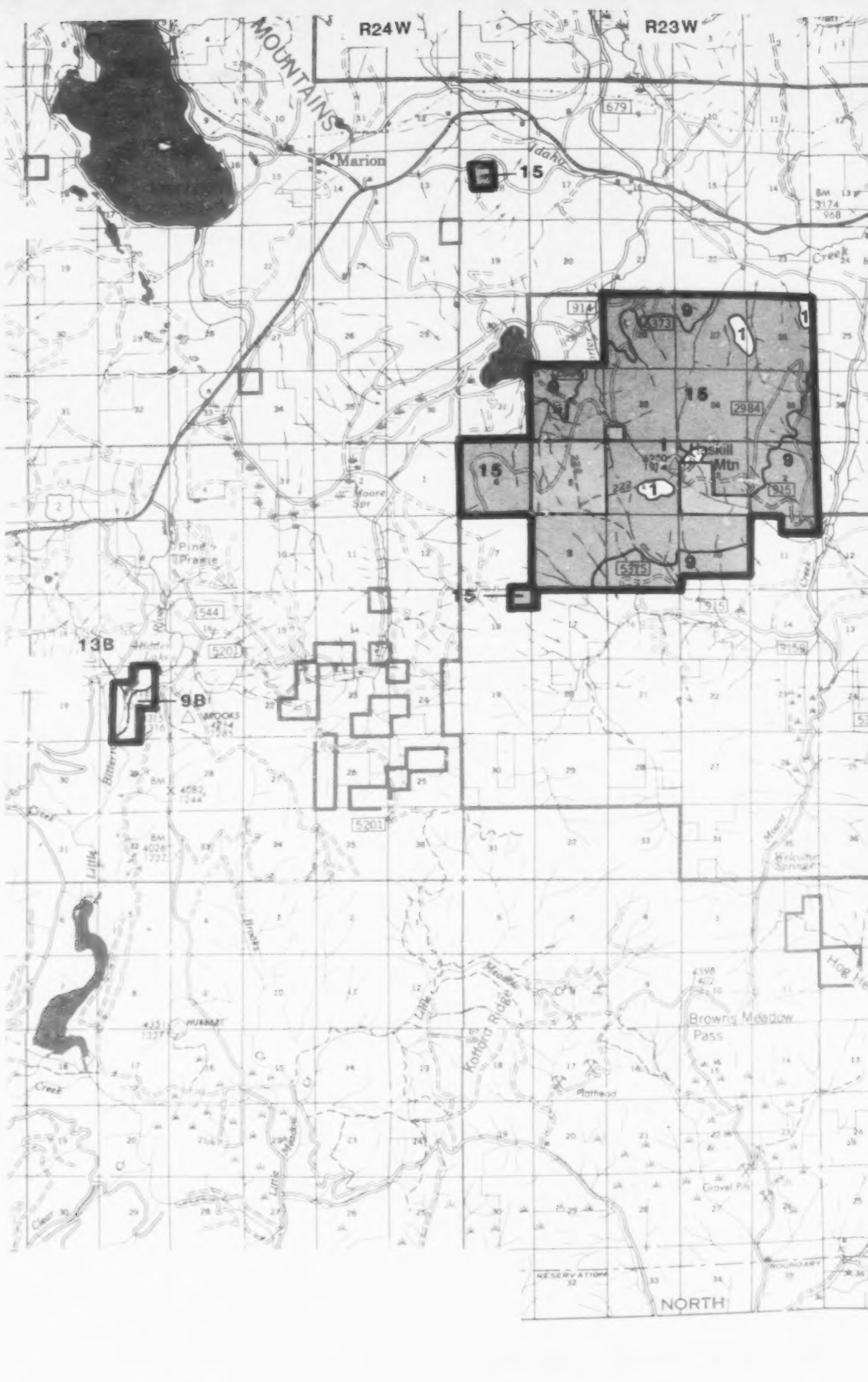
### 2. SUMMARY OF INSECT AND DISEASE MANAGEMENT

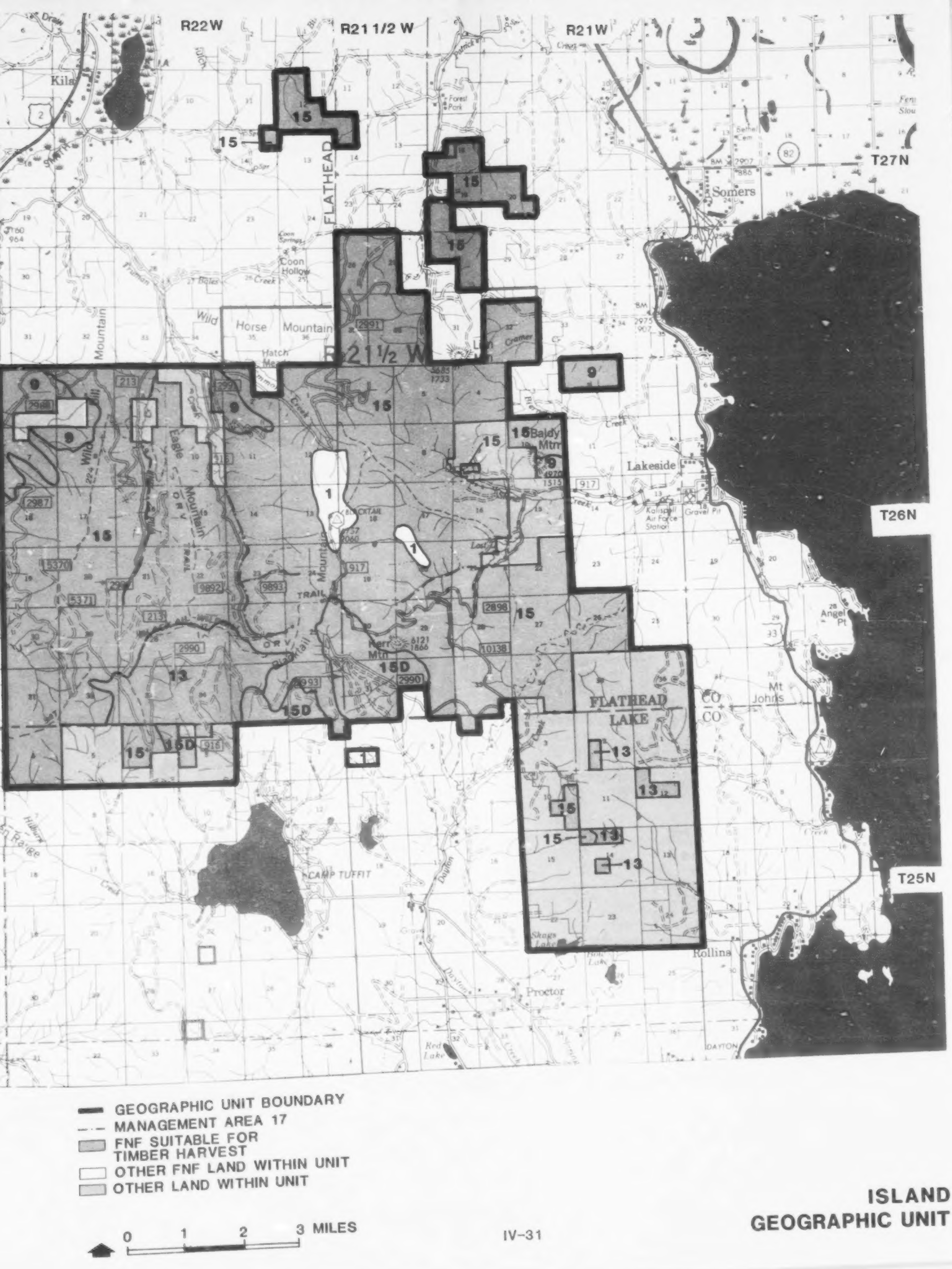
Currently the Island Geographic Unit is experiencing a major epidemic of the mountain pine beetle. The standing mature volume in this area is approximately 340 MMBF of which 110 MMBF is LP (lodgepole pine). Due to the age class and size of the LP, a significant portion of this LP (70 MMBF on 5,500 acres) is expected to be killed during the next 10-year period. All state of the art techniques will be used to deal with the current infestation. Salvage and regeneration harvest will be a major tool used to capture the value from the mortality. The 10-year timber sale offerings schedule highlights the emphasis placed on cutting these high priority areas in the current decade.

## 3. SUMMARY OF MANAGEMENT AREAS

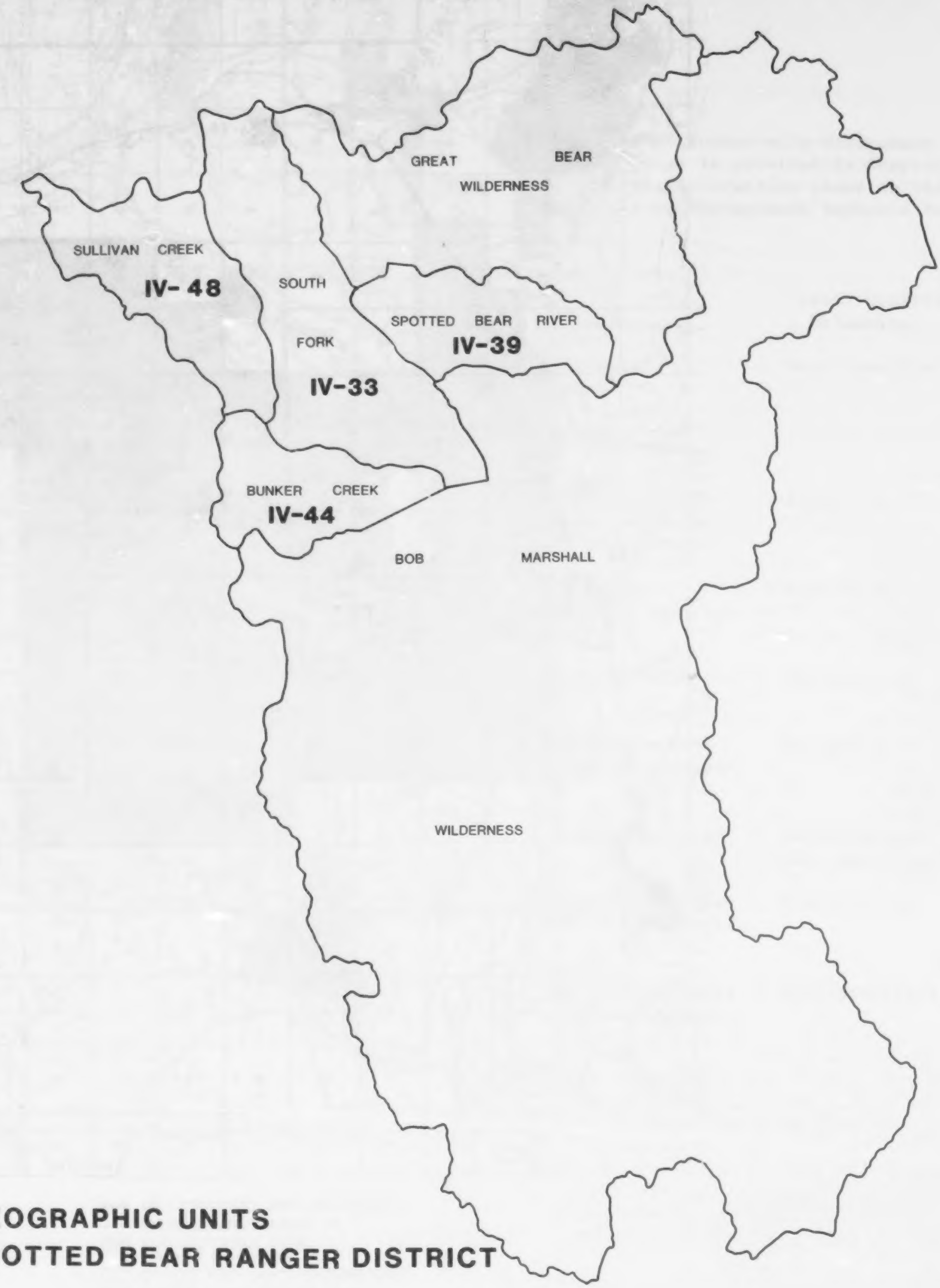
The Island Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 1 | Maintain present conditions with minimal investment for resource activities. | None Specified |
| 9 | Provide cover and forage areas suitable for whitetailed deer winter habitat. | Partial Retention |
| 9B | Allow natural vegetative changes to occur with minimum interference. Area has been recommended for RNA designation. | Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 13B | Allow natural vegetative changes to occur with minimum interference. Area has been recommended for RNA designation. | Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 15D | Emphasize cost-effective timber production with roads and special consideration to visual quality management. | Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R24W
R23W
MOUNTAINS
Marion
Idaho
679
15
914
373
9
1
15
2984
Haskill Mtn
9
915
15
9
5315
15
Moore Spr
2
Pine Prairie
544
5201
13B
9B
Bitterroot
Little
5201
Creek
Brooks
Little
Meadow
Kofford Ridge
Browns Meadow Pass
Hog He
Gravel Pit
Creek
Clear
RESERVATION
BOUNDARY
NORTH


R22W
R21 1/2 W
R21W
T27N
T26N
T25N
Kila
Somers
Lakeside
Rollins
Proctor
Coon Hollow
Horse Mountain
Baldy Mtn
Kerr Mtn
Angel Pt
Mt Johns
FLATHEAD LAKE
CAMP TUFFIT
Kalispell Air Force Station
Gravel Pit
Skaggs Lake
Red Lake
15
15D
13
9
1
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## ISLAND GEOGRAPHIC UNIT


GREAT BEAR WILDERNESS
SULLIVAN CREEK
IV-48
SOUTH FORK
IV-33
SPOTTED BEAR RIVER
IV-39
BUNKER CREEK
IV-44
BOB MARSHALL WILDERNESS

## GEOGRAPHIC UNITS
## SPOTTED BEAR RANGER DISTRICT

# SOUTH FORK GEOGRAPHIC UNIT

70,800 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located in the South Fork of the Flathead River drainage within Flathead County. It is bordered by the Bob Marshall Wilderness on the south; the Spotted Bear River, and Great Bear and Bob Marshall Wildernesses on the east; Sullivan Creek on the northwest corner; Kah Mountain, Soldier Mountain, and Bruce Ridge on the west; and Bruce Mountain, Chipmunk Peak, and Bunker Hill on the southwest. This Geographic Unit encompasses the South Fork corridor, a major entry point for the Bob Marshall Wilderness.

There is no private land in or around the unit. This unit is 40 miles by dirt road from the nearest permanent settlement and paved access point.

The South Fork of the Flathead River bisects the unit. This portion of the Wild and Scenic River System is classified wild from the wilderness boundary to the Spotted Bear River and recreational from Spotted Bear River to the reservoir. Approximately 6 miles of the Hungry Horse Reservoir extends into the north end of the unit.

This unit has more moderate terrain than the other Geographic Units within the Spotted Bear Ranger District; nevertheless, there is a considerable amount of steep, rocky terrain, especially the area east of the river that lies adjacent to the wildernesses. Meadow Creek Gorge, a spectacular geologic feature, is located near the south end of the unit.

Higher elevations are above timberline. Timber species in timbered areas are subalpine fir and whitebark pine at the higher elevations; western larch, Douglas-fir, lodgepole pine, and Engelmann spruce at all elevations; and ponderosa pine and western white pine at lower elevations. Subalpine fir is found along the bottoms of drainages at lower elevations.

Average annual precipitation ranges from 28 inches along the river to 80 inches at the highest parts of the unit. Snowfall is 250 inches near the river and 400 inches at high elevations each year. Temperatures are cool with wintertime lows of about 8°F and summertime highs about 76°F.

Significant acreage of elk and mule deer winter range is situated on west facing slopes east of the South Fork of the Flathead River. The Bruce Ridge and Little Creek area is inhabited by mountain goats. The segment of the South Fork within this Unit is a migratory route for bull trout moving to spawning areas within the Bob Marshall Wilderness. This segment is also an important fishery for cutthroat trout.

Human occupancy is seasonal. The Spotted Bear Ranger Station and three resorts which operate under special-use permits comprise the summer/fall resident population. In addition, hunting season brings a significant increase in public use of the area.

There is an airstrip at Meadow Creek and one on the west side of the Scuth Fork 3 miles north of the Ranger Station.

River floating, big-game hunting, fishing, berrypicking, and boating on the reservoir are the most popular forms of recreation. Due to remoteness and closure of the area because of snowfall, very limited winter recreation use occurs. General public recreation use of the area is supplemented by services provided to the public by outfitters and guides. The three resorts provide an assortment of recreational opportunities. A developed campground at Spotted Bear receives heavy summer and fall use. Use during hunting season usually extends beyond the normal season of operation. A small camping area is located at Peter's Creek.

The visual significance of the area is highest of all of the Geographic Units on the Spotted Bear Ranger District because of the concentration of public traffic through the area and the proximity of the wildernesses and the Wild and Scenic River.

## B. HISTORIC MANAGEMENT ACTIVITIES

Logging has taken place throughout much of the Unit. Generally all of the arterial and collector roads necessary for the transportation system have been constructed. Local roads would be needed in undeveloped areas which are suitable for timber management if timber harvest were to occur.

Historic management specifed that modification or maximum modification VQO's (visual quality objectives) apply to most suitable timber areas; however, a retention VQO was prescribed for the areas east of the reservoir, and west of the South Fork from just below the Spotted Bear Ranger Administrative Complex south to Bunker Creek.

Use of trails accessing the Bob Marshall Wilderness has been heavy. In the past, facilities designed to reduce the resource degradation associated with high levels of use have been minimal. Developed recreation management is focused on Spotted Bear Campground.

Much of the direct wildlife habitat improvement on the Flathead Forest has occurred in this Geographic Unit.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- To provide fall habitat security for grizzly bears and elk, restrict motorized road access from October 15 to November 30 in the Larch-Addition, Soldier, and Elam-Kah Mountain area.

-- To provide habitat security for grizzly bears during the spring, close all newly constructed roads in the Bruce Meadows area to public motorized use. These roads may be open for firewood gathering during specific periods of the year as determined by project analyses.

-- To allow mule deer and elk to make optimum use of summer habitat in the Taylor-Clark Creeks area, between Road 895 and Hungry Horse Reservoir, the Clark Creek loop road will be closed from October 15 to November 30.

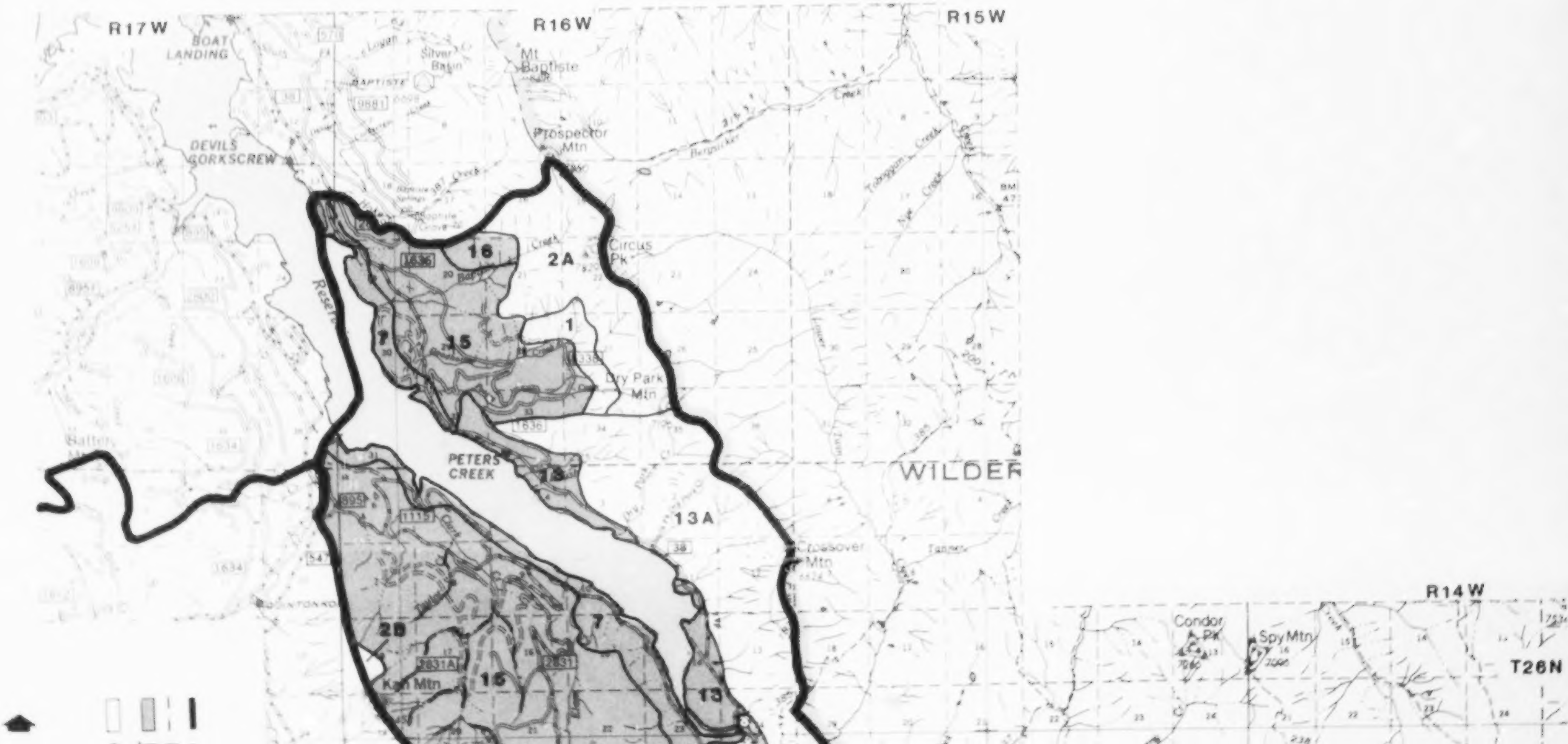
-- Management Area 13 - As necessary to provide mule deer and elk undisturbed use of winter range, apply motorized access restriction form December 1 to May 15.

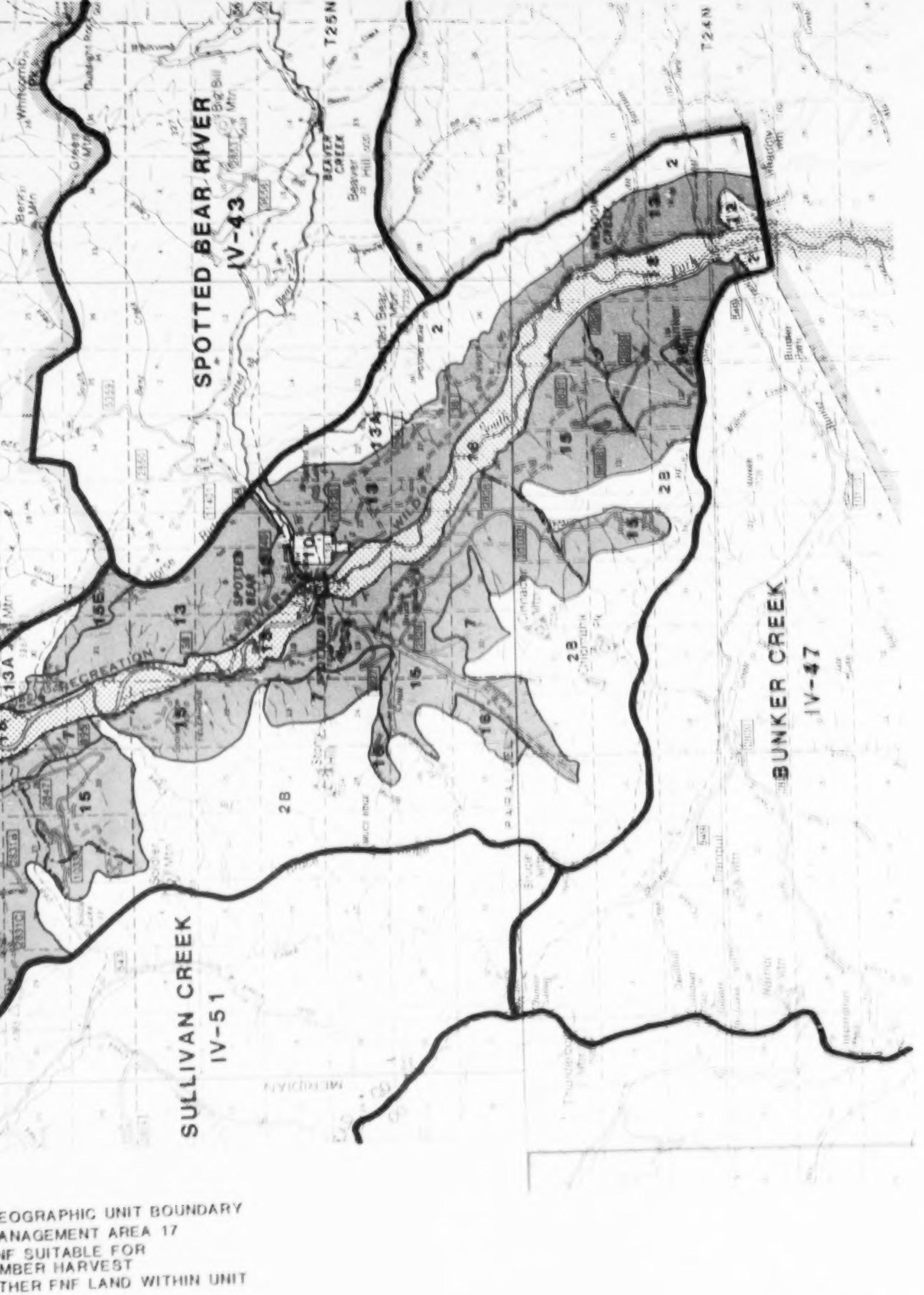
-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

### 2. SUMMARY OF MANAGEMENT AREAS

The South Fork Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The tabulation on the following page, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 1 | Maintain present conditions with minimal investment for resource activities. | None Specified |
| 2 | Provide for a variety of primitive dispersed recreation opportunities. | Retention |
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 7 | Maintain a pleasing, natural appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 10 | Administrative site | None Specified |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 13A | Provide cover and forage areas suitable for mule deer and elk winter habitat. Area is not suitable for timber harvest. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/ Max. Modification |
| 15A | Emphasize cost-effective timber production with roads and special consideration for seasonal habitat requirements for elk. | Modification/ Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/ Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |
| 18 | Provide optimum opportunity for public use and enjoyment (Flathead Wild and Scenic River). | Partial Retention and Retention |


R17W
R16W
R15W
R14W
T26N
BOAT LANDING
DEVILS CORKSCREW
Silver Basin
Mt Baptiste
Prospector Mtn
Circus Pk
Dry Park Mtn
PETERS CREEK
Crossover Mtn
Condor Pk
Spy Mtn
Kah Mtn
WILDER
Reservoir
16
2A
1
7
15
13
13A
28


SPOTTED BEAR RIVER
IV-43
BUNKER CREEK
IV-47
SULLIVAN CREEK
IV-51
T25N
T24N
SPOTTED BEAR
WILD
RECREATION
NORTH
PARALLEL
MERIDIAN
2
2B
7
10
12
13
13A
15
15E
16
18
EOGRAPHIC UNIT BOUNDARY
ANAGEMENT AREA 17
NF SUITABLE FOR
MBER HARVEST
THER FNF LAND WITHIN UNIT
0
1
2
3 MILES

SOUTH FORK
GEOGRAPHIC UNIT

# SPOTTED BEAR RIVER GEOGRAPHIC UNIT
36,000 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located in the South Fork of the Flathead River drainage in Flathead County. It is bordered by the Great Bear Wilderness on the north and east; the Bob Marshall Wilderness on the south; and Horse Ridge and Spotted Bear Mountain on the west. This Geographic Unit encompasses the road and trailheads that provide primary access to major portions of the Great Bear and Bob Marshall Wildernesses. There is no intermingled ownership in or around this unit.

The Spotted Bear River bisects and drains the area, flowing west into the South Fork of the Flathead River. The western third of the Unit north of the Spotted Bear River has gentle-to-moderate slopes. The remainder of the unit is comprised of steep terrain.

Much of this Geographic Unit is high country, with slopes that rise above timberline. In the higher elevation timbered areas, subalpine fir and whitebark pine are predominate. A mixture of Douglas-fir, western larch, lodgepole pine, and Engelmann spruce are found at all elevations. At lower elevations, subalpine fir occurs mainly along the bottoms of drainages. Ponderosa pine also occurs at lower elevations.

Average yearly precipitation is 28 inches along the river and 80 inches on mountain tops. Of this, about 55 percent occurs as snowfall with averages of 200 inches at low elevations and 400 inches at high elevations. Temperatures are cool: winter lows average $8^{o}$F, summer highs average $76^{o}$F.

A significant area of elk and mule deer winter range is situated in the west half of the unit, mostly north of the Spotted Bear River. The unit is a primary migration route for elk moving from summer habitat in the upper Spotted Bear River and upper Middle Fork of the Flathead to winter range. The Spotted Bear River is important for bull trout spawning up to Dean Falls in the Bob Marshall Wilderness. Tributaries of the river contain resident cutthroat trout.

There are no permanent human residents in this area; the nearest permanent concentration of people with roaded access to the area is 55 miles away, at Martin City. Visitors to the area are generally interested in recreation opportunities--particularly hunting, fishing, hiking, camping, and berrypicking. This is the most heavily hunted portion of the Spotted Bear Ranger District, especially late in the hunting season.

Visual significance of this Geographic Unit is relatively low; however, to date a high level of visual quality has been maintained.

**One developed site (Beaver Creek) exists in this Unit and has been used as an access point for the wildernesses.**

**Three major wilderness trailheads are located at Big Bill, Beaver Creek, and Webb Lake. The area is a major access for outfitters going to the upper Spotted Bear River and Upper Middle Fork areas within the wildernesses.**

## B. HISTORIC MANAGEMENT ACTIVITIES

Most of the timber harvest of the past has taken place in the western third of the unit, north of the Spotted Bear River. Logging has occurred on moderate slopes affecting about 25 percent of the area.

Past management direction specified modification and maximum modification VQO's (visual quality objective) for those areas suitable for timber management.

If past timber management objectives were pursued, additional local roads would be constructed in undeveloped areas that are suitable for timber.

Recreation management has been concentrated on the developed recreation site at Beaver Creek and on the major trails leading into the wildernesses.

Motor vehicles are restricted to the Spotted Bear River Road, Flat Creek Road, Big Bill Road, and Whitecomb Creek Road during the periods of the year when these roads are not snow covered or closed to protect the road surface.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

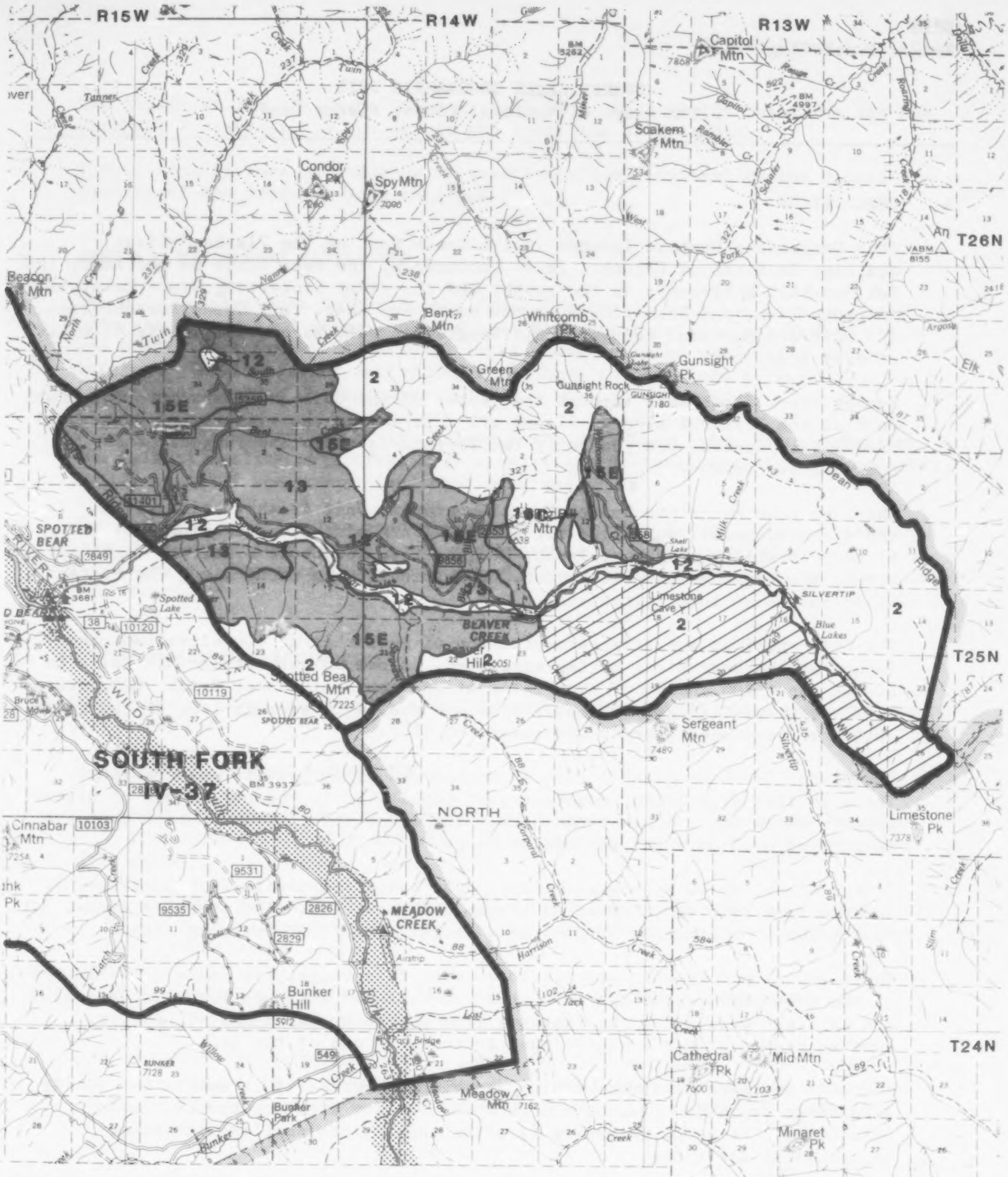
Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

- -- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.
- -- Management Area 13 - As necessary to provide mule deer and elk undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15.
- -- To allow secure use of important summer habitat and facilitate migration of elk to winter habitat, restrict motorized access year round on all roads south of Spotted Bear River and east of the South Fork of the Flathead River, except those roads within the Spotted Bear Ranger District Administrative Complex.
- -- To allow secure use of important summer habitat and facilitate and provide security for the migration of elk to winter habitat, restrict motorized access from September 1 to November 30. Permit motorized access in Flat Creek and on the Spotted Bear River Road to Beaver Creek Campground.
- -- All newly constructed roads will be closed year round to public use. These may be opened for firewood gathering during specific periods, as determined by project analyses.
- -- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Spotted Bear River Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2 | Provide for a variety of primitive dispersed recreation opportunities. | Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 15E | Emphasize cost-effective timber production with roads and special consideration for seasonal habitat requirements for elk. | Modification/<br>Max. Modification |
| 16C | Emphasize cost-effective timber production using roadless logging methods and special consideration for seasonal habitat requirements of elk. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |



R15W
R14W
R13W
T26N
T25N
T24N
Capitol Mtn
Soakem Mtn
Condor Pk
Spy Mtn
Beacon Mtn
Bent Mtn
Whitcomb Pk
Green Mtn
Gunsight Rock
Gunsight Pk
SPOTTED BEAR
Spotted Lake
Spotted Bear Mtn
Beaver Hill
BEAVER CREEK
Limestone Cave
SILVERTIP
Blue Lakes
Sergeant Mtn
Limestone Pk
SOUTH FORK
IV-37
NORTH
Cinnabar Mtn
MEADOW CREEK
Bunker Hill
Cathedral Pk
Mid Mtn
Meadow Mtn
Minaret Pk
Bunker Park
WILD
12
15E
13
2
1

▬ GEOGRAPHIC UNIT BOUNDARY

-·- MANAGEMENT AREA 17

▨ FNF SUITABLE FOR TIMBER HARVEST

☐ OTHER FNF LAND WITHIN UNIT

▨ PROPOSED WILDERNESS

0 1 2 3 MILES

# SPOTTED BEAR RIVER GEOGRAPHIC UNIT

## BUNKER CREEK GEOGRAPHIC UNIT

1,800 Acres of National Forest System Land

### A. DESCRIPTION

This Geographic Unit is located in the South Fork of the Flathead River drainage in Flathead County. It is bordered by the Swan Range on the west; the Bob Marshall Wilderness on the south; and the ridge connecting Bruce Mountain, Chipmunk Peak, and Bunker Hill to the north and east. All lands surrounding the Unit are National Forest. This Geographic Unit is accessible via 65 miles of dirt road.

Bunker Creek flows east through the center of the Unit and flows into the South Fork of the Flathead River. Slopes are moderate in the vicinity of Bunker and Middle Fork Creeks, but generally the terrain is steep and rugged. Rock outcrops are common.

The high country in the Bunker Creek Geographic Unit is above timberline. In the timbered areas, subalpine fir and whitebark pine are predominate at the higher elevations. Western larch, Douglas-fir, lodgepole pine, and Engelmann spruce are found at all elevations. Subalpine fir is found along the bottoms of drainages at lower elevations.

The Unit receives a yearly percipitation of 30 inches at low elevations and 90 inches at the headwaters of the watershed. About 60 percent of this falls as snow. About 200 inches of snow falls at the mouth of Bunker Creek; 600 inches on the uppermost ridges. Temperatures are cool with average lows in the winter of 8°F and average highs in the summer of 76°F.

The Bunker Creek Geographic Unit is considered prime grizzly bear habitat. There is also significant mountain goat population in the north fork of Bunker Creek. A few moose inhabit the area. The lower end of Bunker Creek contains an area of mule deer and elk winter range.

Bunker Creek, up to a natural barrier just below the middle fork junction, is an important bull trout spawning stream. Bunker Creek also provides access for bull trout to migrate to Gorge Creek, another important spawning stream.

There are no permanent residents in or near this Geographic Unit. This is one of the most remote nonwilderness areas of Flathead National Forest. Generally use is light because of the distance from permanent settlements; however, hunting season brings a significant increase in use of the area.

The Unit provides a unique hunting experience because it is remote but easily accessible by road. Fishing and berrypicking are also popular recreation activities. Firewood gathering is often done in conjunction with other recreational activities.

The trailhead for the Gorge Creek Trail #218, a major entry point for the Bob Marshall Wilderness, is located in the lower end of this Unit.

Visual significance of the area is relatively low. Generally, the visual quality of the area has been retained.

### B. HISTORIC MANAGEMENT ACTIVITIES

The only logging done in the Bunker Creek Geographic Unit has been on the moderate bottom land slopes. Roads have been constructed along Bunker Creek and Middle Fork Creek. Additional local roads would be needed for future logging. Timber harvest activities would have to move into steeper slopes and as yet unaccessed side drainages.

Under past management, a strip of land north of Bunker Creek had a retention VQO (visual quality objective). In other areas suitable for timber management, modification of the visual landscape occurred.

The Bunker Creek Road has been closed at Gorge Creek during hunting season to provide the big-game security and the hunter a backcountry hunting opportunity. The road above Middle Fork Creek has been closed to public access year round.

### C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

#### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

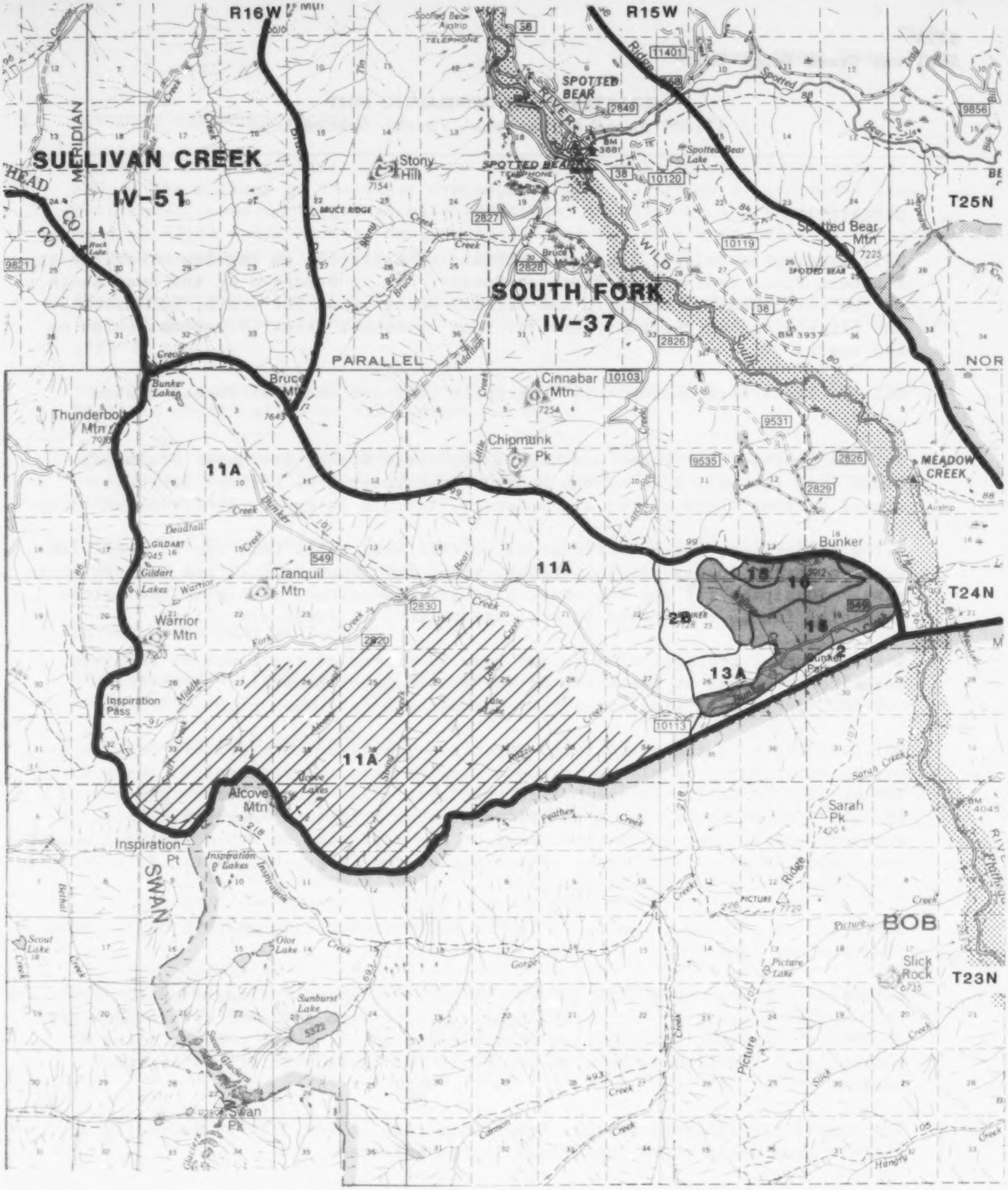
-- Management Area 11A - All roads will be closed year round to motorized public access.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives; and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Bunker Creek Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2 | Provide for a variety of primitive dispersed recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 11A | Maintain or enhance grizzly bear habitat. | Modification |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13A | Provide cover and forage areas suitable for mule deer and elk winter habitat. Area not suitable for timber harvest. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R16W
R15W
SULLIVAN CREEK
IV-51
SOUTH FORK
IV-37
MERIDIAN
PARALLEL
T25N
T24N
T23N
Spotted Bear
Spotted Bear Mtn
Stony Hill
Bruce Mtn
Cinnabar Mtn
Chipmunk Pk
Thunderbolt Mtn
Bunker Lakes
Tranquil Mtn
Warrior Mtn
Inspiration Pass
Alcove Mtn
Inspiration Pt
Sarah Pk
Slick Rock
Meadow Creek
Sunburst Lake
Swan Pk
SWAN
BOB
11A
2B
13A
15
16
2

GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
PROPOSED WILDERNESS
0 1 2 3 MILES

## BUNKER CREEK GEOGRAPHIC UNIT

## SULLIVAN CREEK GEOGRAPHIC UNIT

47,800 Acres of National Forest System Land

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### A. DESCRIPTION

This Geographic Unit is located southeast of Kalispell in the South Fork of the Flathead River drainage in Flathead County. It is bordered by the Swan Range on the west; Tom Tom Mountain and Wickiup Mountain on the north; Kah Mountain and Bruce Ridge on the east; and the head of Bunker Creek (Bruce Mountain) on the south.

All the lands surrounding this Geographic Unit are National Forest System lands.

This Geographic Unit faces northeast. Sullivan Creek, the major drainage, flows into the west side of the Hungry Horse Reservoir. Except for major stream bottoms where slopes are moderate, terrain is generally steep and rocky.

Below timberline, the timbered areas of this Geographic Unit are stocked with western larch, Douglas-fir, lodgepole pine, Engelmann spruce, and western white pine. Subalpine fir and whitebark pine are predominate at higher elevations. Subalpine fir is also found in drainage bottoms at lower elevations.

Average annual precipitation ranges from 30 inches at the mouth of Sullivan Creek to 70 inches at the crest of the Swan Range. Snowfall ranges from 100-400 inches with wintertime lows averaging 8°F, summer highs, 76°F.

Sullivan Creek is the single most important drainage for migratory westslope cutthroat spawning of all the streams flowing into the reservoir. There is elk summer habitat at low elevations in the Taylor-Elam area. Twenty percent of the elk that winter in the Horse Ridge area move to this Geographic Unit. A minor area of winter range is located on the west side of Kah Mountain. A goat population inhabits the higher elevations of the Geographic Unit. This Unit is also important grizzly bear habitat.

There are no permanent residents in the Sullivan Creek Geographic Unit. Most visitors are interested in recreation activities.

Extensive roading makes this one of the more developed drainages on the Spotted Bear Ranger District. Recreation opportunities with a roaded environment are abundant. Hunting, fishing, and berrypicking are the most popular forms of recreation. The area is heavily hunted in the early part of the big-game season.

The visual significance of this Geographic Unit is low. It is generally not visible from areas where public use is concentrated.

## B. HISTORIC MANAGEMENT ACTIVITIES

There has been a considerable amount of logging activity on the moderate slopes and in the bottoms of the major drainages. Transportation system roads have been constructed in logged areas. Additional local roads and one collector road up Slide Creek need to be constructed for future timber sales if continued timber management activities are planned.

Near the bottom of the Unit (the lower portion of Sullivan Creek) there is a logging camp owned by Royal Logging Company that has operated under special-use permit.

Under past management direction, visual quality objectives for this Geographic Unit are modification or maximum modification.

Recreation management in this Unit is minimal. Seasonal road restrictions provide backcountry hunting opportunities. There are no trails or developed recreation sites.

Portions of Conner Creek, Ball Creek, Branch Creek, and Sullivan Creek Roads have been closed to all motor vehicles year round.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- Manage motorized vehicle access in such a manner that grizzly bear security and denning habitat and mule deer and elk winter range are undisturbed. To achieve this, restrict motorized vehicle access year round on all or portions of Slide, Posey, and Upper Rock Creek Roads. Restrict access from October 15 to July 1 on all or portions of Bull, Branch, and the north fork of Conner Creek Road.

- **Restrict motorized road access above 5,000 feet in elevation in drainages adjacent to active resource development activities to allow grizzly bears secure use of habitat.**

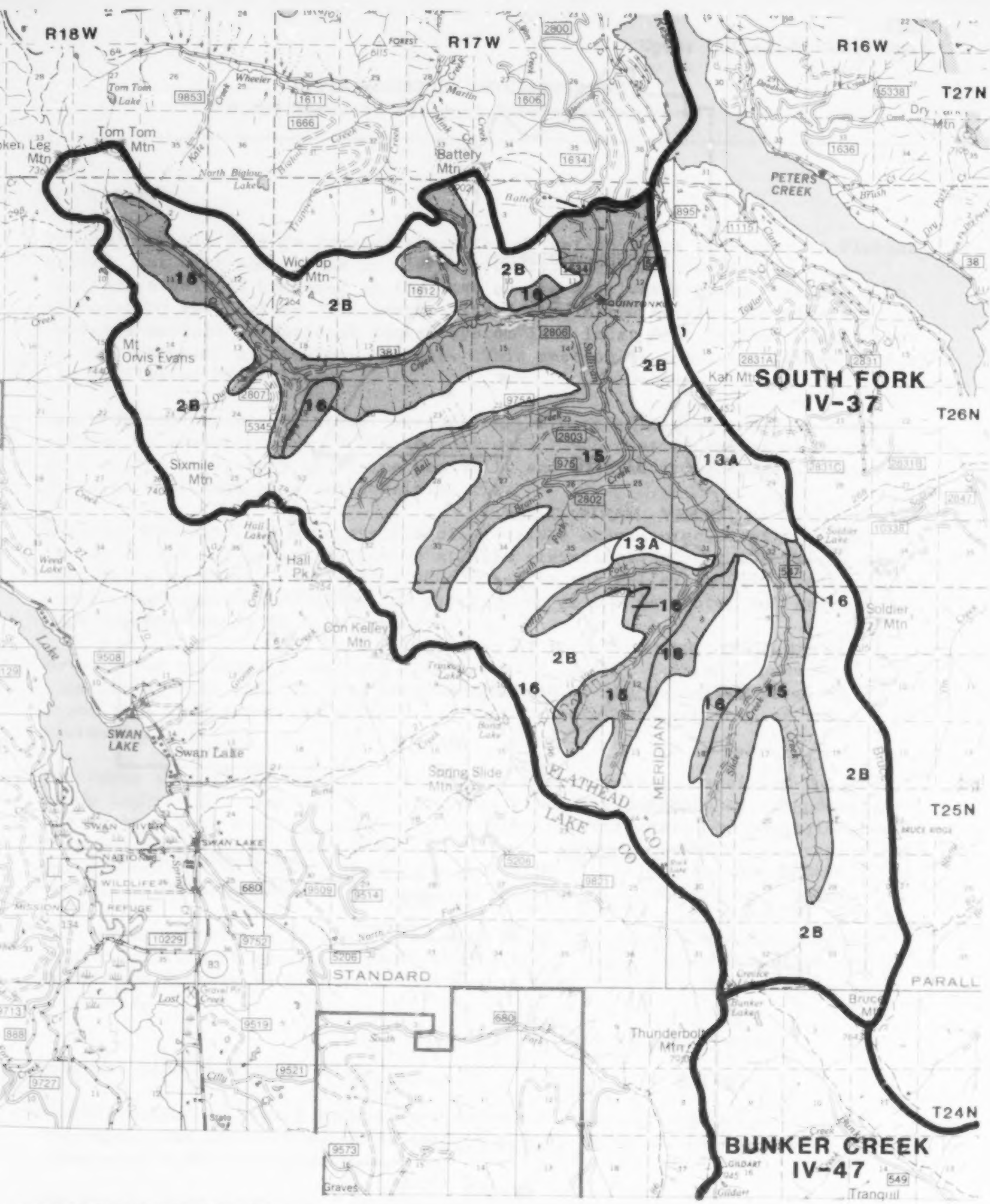
- **Management Area 13A - As necessary to allow mule deer and elk undisturbed use of habitat, apply motorized access restrictions year round.**

- **In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.**

## 2. SUMMARY OF MANAGEMENT AREAS

The Sullivan Creek Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area:

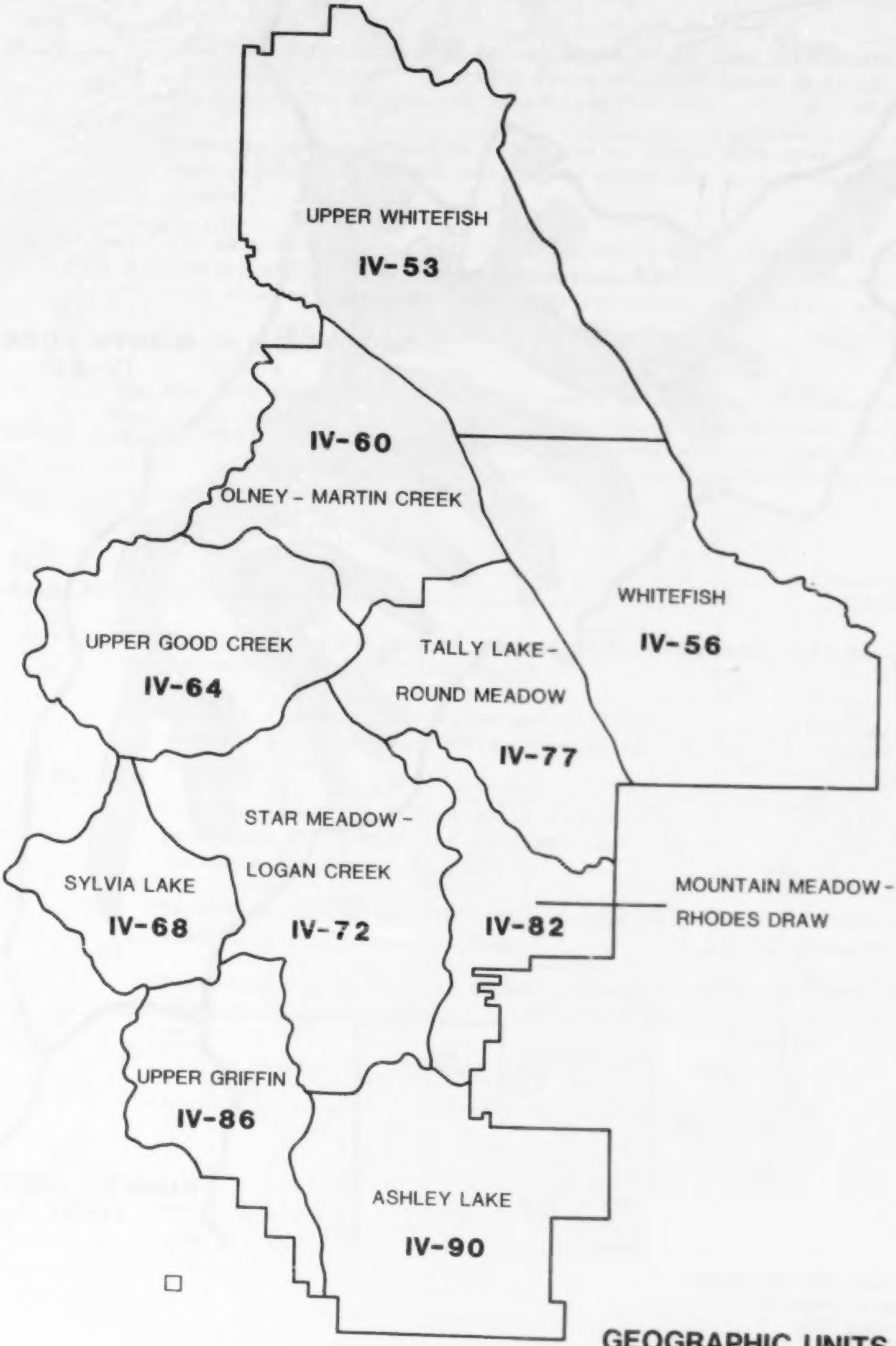
| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13A | Provide cover and forage areas suitable for mule deer and elk winter habitat. Area is not suitable for timber harvest. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |


R18W
R17W
R16W
T27N
T26N
T25N
T24N
Tom Tom Mtn
Battery Mtn
Wickiup Mtn
Mt Orvis Evans
Sixmile Mtn
Hall Pk
Con Kelley Mtn
Soldier Mtn
Spring Slide Mtn
Thunderbolt Mtn
Bruce Mtn
Kah Mtn
QUINTONKON
SWAN LAKE
Swan Lake
SWAN RIVER NATIONAL WILDLIFE REFUGE
PETERS CREEK
FLATHEAD CO
LAKE CO
MERIDIAN
STANDARD PARALL
SOUTH FORK IV-37
BUNKER CREEK IV-47
2B
13A
15
16
Sullivan Creek
South Fork
Tranquil

GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT

0 1 2 3 MILES

## SULLIVAN CREEK GEOGRAPHIC UNIT


UPPER WHITEFISH
IV-53
IV-60
OLNEY - MARTIN CREEK
WHITEFISH
IV-56
UPPER GOOD CREEK
IV-64
TALLY LAKE -
ROUND MEADOW
IV-77
STAR MEADOW -
LOGAN CREEK
IV-72
SYLVIA LAKE
IV-68
IV-82
MOUNTAIN MEADOW -
RHODES DRAW
UPPER GRIFFIN
IV-86
ASHLEY LAKE
IV-90

GEOGRAPHIC UNITS
TALLY LAKE RANGER DISTRICT

# UPPER WHITEFISH GEOGRAPHIC UNIT
8,700 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located along the Whitefish Range primarily in Flathead County, but with some acres in Lincoln County. The main portion of this Geographic Unit is bordered on the west by the Stillwater State Forest and on the east by the Glacier View Ranger District. This Unit also contains an isolated section of National Forest System land located on Stryker Ridge, east of the community of Stryker, Montana. This section is completely surrounded by the Stillwater State Forest.

The terrain consists of steep, west facing, alpine glaciated mountain slopes varying in elevation from 5,200 to just over 7,400 feet at Whitefish Mountain. Most of the topography is alpine headwalls and glacial trough walls. This unit contains whitebark pine and subalpine fir.

The area is moist and moderately cool. Average annual precipitation is 30 inches in the valley and 70 inches at high elevations. About two-thirds of this falls as snow. Snowfall is 300 inches in the valley and 600 inches at the top of the area. The average low temperature is 8°F in winter and average high temperature is 80°F in summer.

None of the streams on National Forest System land in this Unit provide significant fish habitat. The northern portion of the Whitefish Range is associated with the prime grizzly bear habitat of the North Fork of the Flathead River.

The Upper Whitefish Geographic Unit faces several small communities located along Highway 93. Residents of this area generally maintain an independent lifestyle. This area is relatively isolated and surrounded by mountains to the east and west. Local residents, as well as residents of Whitefish, regard this Upper Whitefish Geographic Unit as a source of alpine recreation opportunities that is relatively close at hand and undisturbed by developed activities.

The visual importance is high. The ability of the area to absorb management activities without adverse impacts to the visual resource is low. Travelers on AMTRAK and Highway 93 have opportunities to view this area as do local residents.

## B. HISTORIC MANAGEMENT ACTIVITIES

A small amount of timber harvest has taken place in the head of Swift Creek drainage. The majority of this Geographic Unit, however, is unsuitable for commercial timber management.

The single road accessing this Geographic Unit was built in conjunction with the timber harvest activities in Swift Creek. The road crosses the unit in the East Fork of Swift Creek and crosses the Whitefish Divide, tying into the Red Meadow Creek road.

Recreation management has focused on the Whitefish Divide/Smoky Range National Recreation Trail which extends the length of the Unit.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

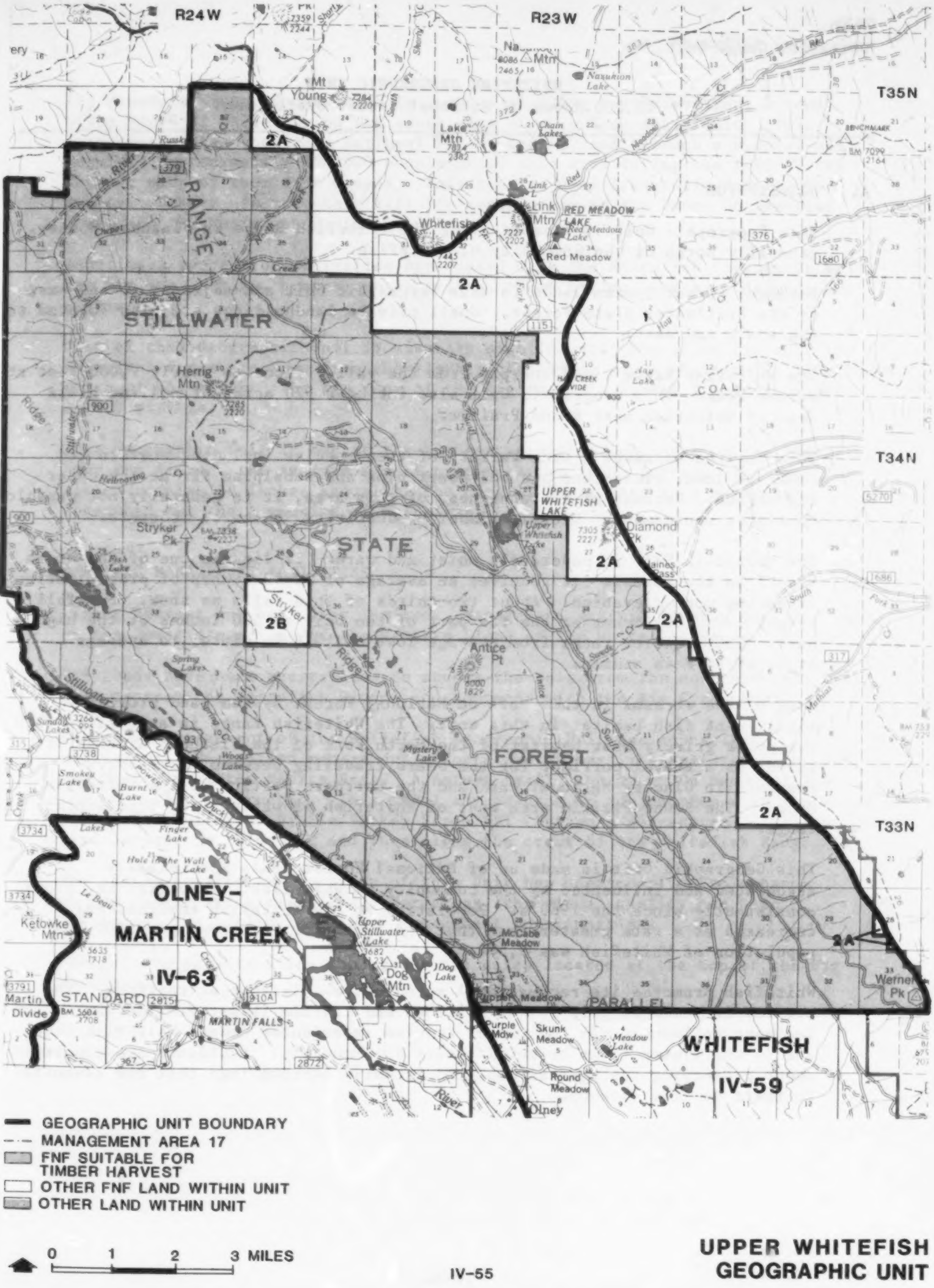
-- Close local roads along the Whitefish Divide year round to provide security for grizzly bears using this travel corridor.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

### 2. SUMMARY OF MANAGEMENT AREAS

The Upper Whitefish Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |


R24W
R23W
T35N
T34N
T33N
Mt Young
Lake Mtn
Chain Lakes
Nasukoin Mtn
Nasukoin Lake
Link L
Link Mtn
RED MEADOW LAKE
Red Meadow Lake
Red Meadow
Whitefish Mtn
Red Meadow Cr
RANGE
STILLWATER
STATE
FOREST
Herrig Mtn
Hay Cr
Hay Lake
HAY CREEK DIVIDE
COAL
Ridge
Stillwater
Hellroaring Cr
Stryker Pk
Fish Lake
UPPER WHITEFISH LAKE
Upper Whitefish Lake
Diamond Pk
Haines Pass
Stryker
Antice Pt
Spring Lakes
Stillwater
Mystery Lake
Sunday Lakes
Smokey Lake
Burnt Lake
Woods Lake
Finder Lake
Hole in the Wall Lake
Duck
Le Beau
Ketowke Mtn
OLNEY-
MARTIN CREEK
IV-63
Upper Stillwater Lake
Dog Mtn
Dog Lake
McCabe Meadow
Werner Pk
Martin
Divide
STANDARD
MARTIN FALLS
Purple Mdw
Skunk Meadow
Meadow Lake
Round Meadow
Olney
River
WHITEFISH
IV-59
PARALLEL
South Fork
Mathias
2A
2A
2A
2A
2A
2A
2B
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

**UPPER WHITEFISH GEOGRAPHIC UNIT**

# WHITEFISH GEOGRAPHIC UNIT

10,200 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located along the Whitefish Range in Flathead County, generally north of the community of Whitefish.

National Forest System lands in this Geographic Unit are adjacent to and east of the Stillwater State Forest. Small private landholdings are also located to the south and east.

The Whitefish Range rises sharply from the valley floor to nearly 7,000 feet at Werner Peak. This Geographic Unit also includes 520 acres of rolling hills west of Whitefish near Round Prairie.

This Unit encompasses a wide variety of tree species including western red cedar at lower elevations and whitebark pine and subalpine fir at the upper elevations. Because of the steepness of this area, it is generally not capable of timber management. Overall timber productivity is low to moderate.

The Whitefish Unit is moderately moist and warm. It lies in one of the storm tracks on the Forest. It receives an average of 30-60 inches of precipitation depending upon elevation. About two-thirds of this falls as snow. Snowfall ranges from 150 inches at the low part of the Unit to 500 inches at the high part. Temperatures range from average lows of $10^{o}$F in winter to average highs of $80^{o}$F in summer.

None of the streams in this Unit on National Forest System land provide significant fish habitat in this unit. The Whitefish Range is associated with the prime grizzly bear habitat of the North Fork of the Flathead River. It serves as a travel corridor for the bears traveling between Huckleberry Mountain in Glacier National Park and the northern portion of the Whitefish Range. The Round Prairie area west of Whitefish is whitetailed deer winter range.

This Geographic Unit is made up of National Forest lands most closely associated and influenced by the community of Whitefish. Whitefish has grown consistently since the 1960's. Population in the Whitefish environs has increased at a rate greater than that indicated for the town. In 1980 the population of Whitefish was 3,582.

Whitefish promotes its recreational resources and leisure attractions. The economy is based largely on the railroad and tourism industry. Tourism is the dominant influence. In the summer tourism is oriented toward Whitefish Lake, and in the winter it is oriented toward Big Mountain. Residents are concerned about preserving the recreational and esthetic surroundings that are essential to their tourism economy.

Big Mountain Winter Sports Area is located at 4,800 feet elevation, 7 road miles north of Whitefish on the south edge of this Geographic Unit. This complex operates mostly on National Forest System land through a special-use permit. Approximately 250,000 people skied this area during the 1981-82 ski season, many of them from Canada. This area is used frequently during the summer. Hikers use the chair lift for easy access to the Danny On Memorial Trail and the Whitefish Divide.

Additional recreation activities associated with the Whitefish Geographic Unit are hunting, hiking, cross-country skiing, snowmobiling, and some driving for pleasure.

Most of this Geographic Unit is visually significant. The steep faces of the Whitefish Range are seen from the Flathead Valley as far as Kalispell, 15 miles south of Whitefish. The ski runs of the Big Mountain Winter Sports Area are highly visible.

This Geographic Unit is one of the highest precipitation zones on the Forest. Near the Divide, the average annual precipitation is 65 inches. The lower slopes receive 20 inches annually. The Haskill Basin area is a municipal watershed for the community of Whitefish.

## B. HISTORIC MANAGEMENT ACTIVITIES

Timber harvest has been very limited. Management activities have occurred only on the lower elevations of the western slope of the Whitefish Range.

Two roads have been constructed to access the unit from the northern end. One road crosses the Whitefish Divide and connects with the Big Creek Road.

Generally management of the Whitefish Geographic Unit has emphasized recreation. Recreation management efforts are primarily associated with the Big Mountain Winter Sports Area. A nature trail, the Danny On Memorial Trail, was recently constructed. This trail may be used in conjunction with the chair lift. The Whitefish Divide/Smokey Range NRT (National Recreation Trail) is also located in this unit and runs along the crest of the Whitefish Range.

The visual quality in a portion of this Unit has been modified to enhance winter sports activities. In other areas, the visual quality has been maintained due to limited timber management opportunities.

Special-use permits allow the electronic sites located at the top of the Big Mountain.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

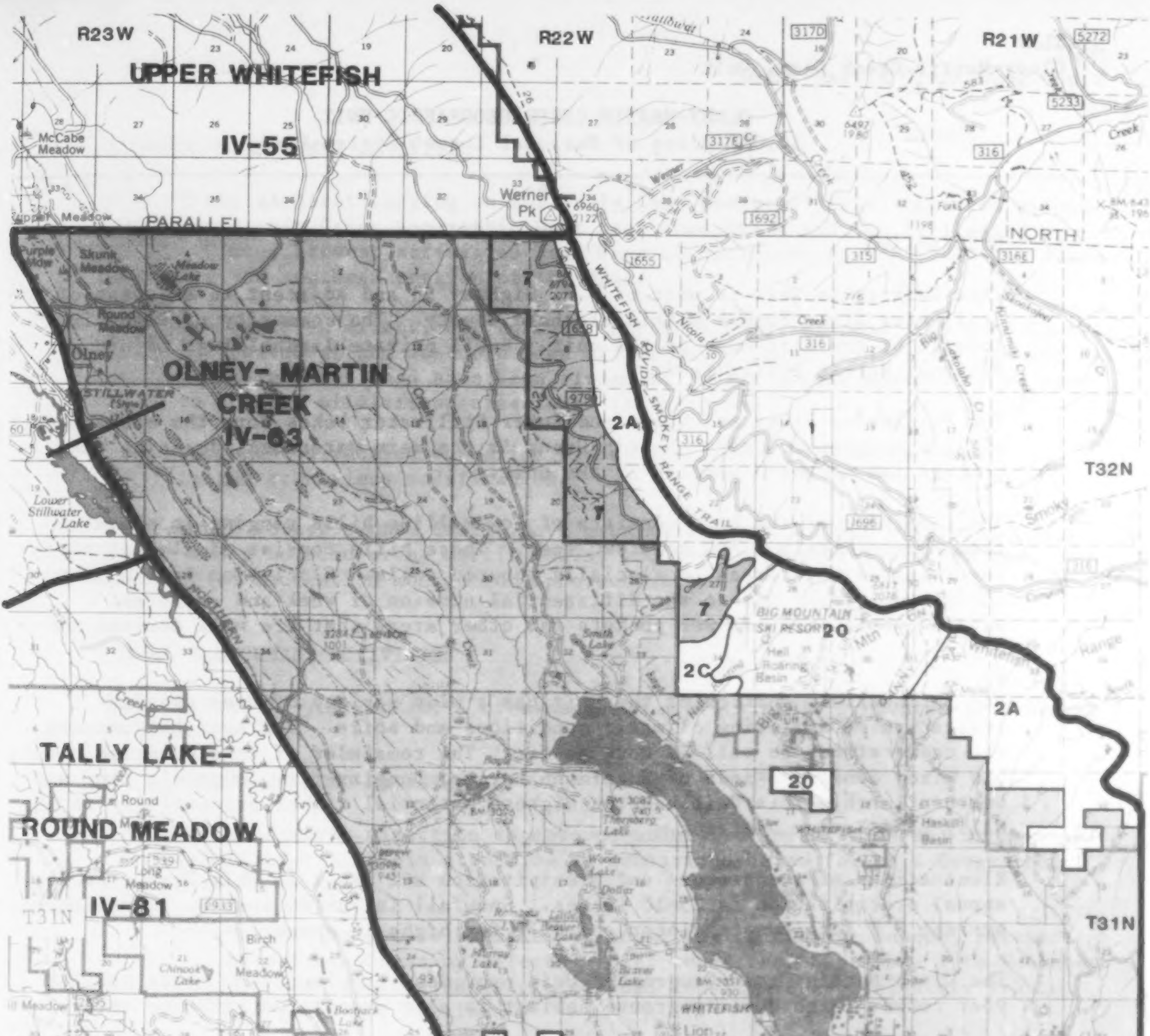
-- Close local roads year round along the Whitefish Divide to provide security for grizzly bears using this travel corridor.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

### 2. SUMMARY OF MANAGEMENT AREAS

The Whitefish Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2C | Provide for a variety of roaded natural appearing recreation opportunities | Retention |
| 7 | Maintain a pleasing, natural appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 9 | Provide cover and forage areas suitable for whitetailed deer winter habitat. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 20 | Manage as a winter sports area under the Big Mountain Ski Area Master Plan. | Modificatiion |


R23W
R22W
R21W
UPPER WHITEFISH
IV-55
McCabe Meadow
Werner Pk
PARALLEL
NORTH
OLNEY- MARTIN CREEK
IV-63
Olney
STILLWATER
Lower Stillwater Lake
WHITEFISH DIVIDE SMOKEY RANGE TRAIL
T32N
BIG MOUNTAIN SKI RESORT
Hell Roaring Basin
Haskill Basin
Smith Lake
TALLY LAKE- ROUND MEADOW
IV-81
T31N
Round Meadow
Long Meadow
Birch Meadow
Chinook Lake
Murray Lake
Beaver Lake
Dollar L.
Woods Lake
Lion Mtn
WHITEFISH
Whitefish
SKYLES LAKE
Spencer Lake
BLANCHARD
Blanchard Lake
Tally Mtn
Stovepipe Canyon
Twin Lakes
Pilot
Stillwater
BURLINGTON
1
2A
2C
7
9
15
20
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## WHITEFISH GEOGRAPHIC UNIT

# OLNEY-MARTIN CREEK GEOGRAPHIC UNIT
30,000 Acres of National Forest System Land

## A. DESCRIPTION

This Geographic Unit is west of U.S. Highway 93 and adjacent to and west of the Stillwater State Forest within Flathead County. The community of Olney is located on the east edge of the unit. Small private landholdings adjoin National Forest System land.

The Stillwater River and Upper and Lower Stillwater Lakes form the eastern edge of this Geographic Unit. Martin Creek is the main watershed, draining the western and southern portion of the unit.

The remainder of the Unit consists of low rolling hills ranging in elevation from approximately 3,200 to 6,000 feet. These hills consist of glacial tills intermingled with areas of glacially scoured soils. Glaciation left a very uneven topography due to the differential erosion of weak and resistant strata. This area has wet pockets and other areas that are well drained and dry.

The northeastern portion of the Unit has a wide variety of tree species indicative of differing climatic conditions and soils. The area has western red cedar stands as well as Douglas-fir. The remainder of this Geographic Unit has mixed conifer stands of Engelmann spruce, Douglas-fir, lodgepole pine and western larch. This Unit has the highest potential timber productivity on the Tally Lake Ranger District.

Fluctuations of temperature and precipitation are small in this Unit. Average annual precipitation is 25-30 inches. Snowfall is 80-100 inches. Temperatures average 9°F for lows in winter and 81°F for highs in summer.

The Olney-Martin Creek Geographic Unit provides very important moose habitat year round. High quality grouse habitat is also associated with the area.

Several small lakes and streams are located in this Unit. In most streams and lakes in the area are found resident westslope cutthroat trout and eastern brook trout populations. Pike fishing is popular in Upper Stillwater Lake.

The small community of Olney is located near this Geographic Unit. The primary access to the area is just south of the town. A lumber mill located south of Olney provides a major source of employment opportunities. Many of the residents of this general area have an independent lifestyle. For many, this Geographic Unit constitutes a source of utilizable resources (berries, house logs, firewood, fish, big game) as well as recreation opportunities.

Recreation uses of the area include hunting, cross-country skiing, boating, canoeing, berrypicking, fishing, and driving for pleasure. The roadless northeastern portion of the unit provides some unique primitive hiking opportunities. Visual significance of the area is low. The Stillwater River can be used for canoeing during high water.

## B. HISTORIC MANAGEMENT ACTIVITIES

Some of the earliest logging on the Tally Lake Ranger District occurred within the Olney-Martin Creek Geographic Unit near Good Creek and the Stillwater River. Timber harvest activities have been concentrated on the lower elevation slopes in the southern portion of the Unit.

This area has been extensively roaded. One main arterial road, the Good Creek Road, is located at the southern edge of the Unit. Most local roads joining it and the Martin Creek Road have been closed to public access seasonally or year round to protect wildlife species found in the area.

Past management direction specified visual management objectives of modification or maximum modification.

No Flathead Forest system trails have been maintained in this Geographic Unit. The unroaded Le Beau area, Martin Falls, and the Stillwater River are the highlighted recreation management opportunities.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- To provide secure habitat for moose during hunting season, restrict motorized access on selected local roads from September 1 to November 30. The desired unrestricted road density is approximately 1.3 to 1.8 miles per section.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and to protect the road surface, soil and water resources, and public safety.

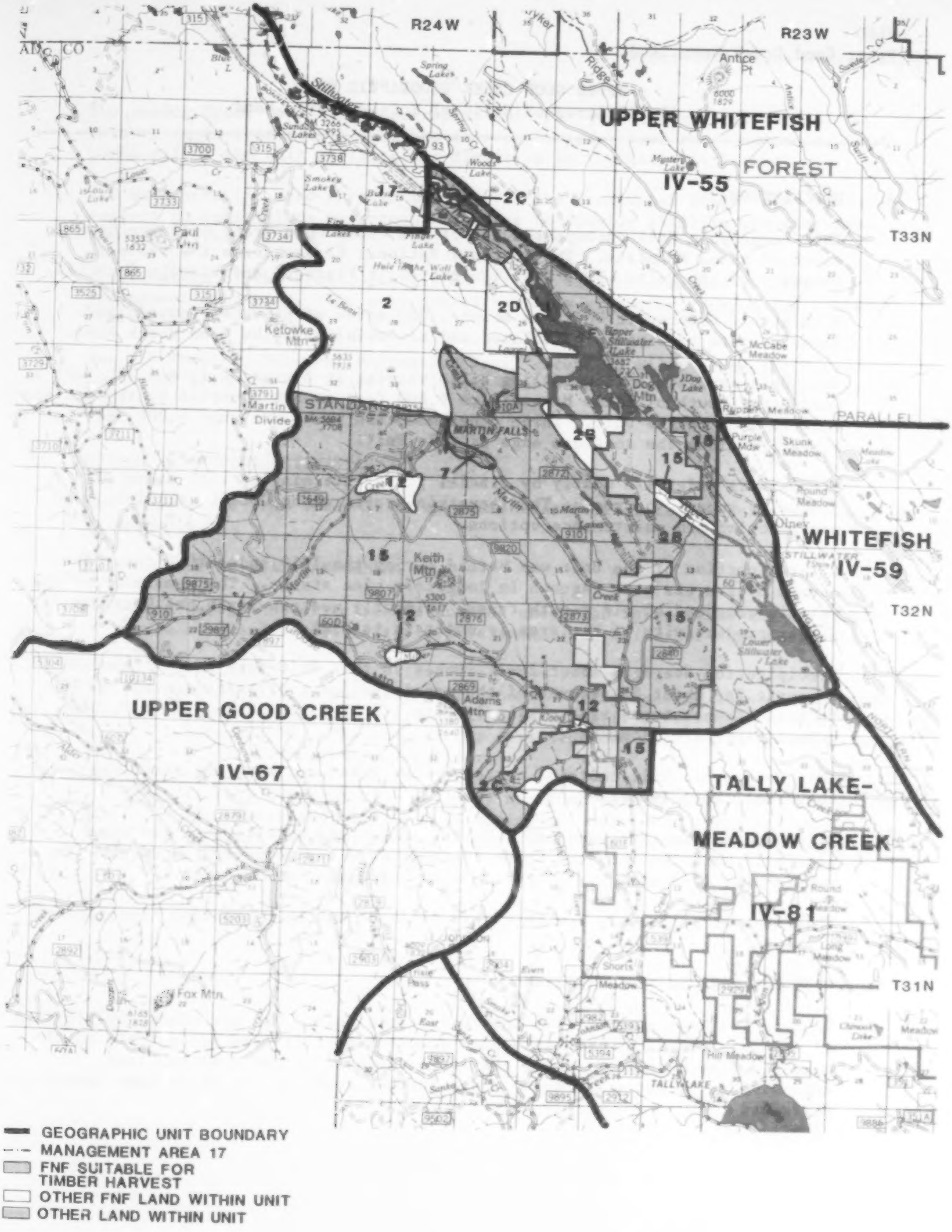
## 2. SUMMARY OF INSECT AND DISEASE MANAGEMENT

Currently this Geographic Unit is experiencing a major epidemic of the mountain pine beetle. The standing mature volume in this area is approximately 178 MMBF of which 34 MMBF is LP (Lodgepole Pine). Due to the age class and size of the LP, a significant portion of this LP (23 MMBF) is expected to be killed during the next 10-year period. All state of the art techniques will be used to deal with the current infestation. Salvage and regeneration harvest will be a major tool used to capture the value from the mortality. The 10-year timber sale offerings schedule highlights this need to cut these high priority areas in the current decade.

## 3. SUMMARY OF MANAGEMENT AREAS

The Olney-Martin Creek Geographic Unit contains portions of Forest-wide management areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2 | Provide for a variety of primitive dispersed recreation opportunities | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 2C | Provide for a variety of roaded natural appearing recreation opportunities | Retention |
| 2D, 2F | Allow natural vegetative changes to occur with minimum interference. Area has been recommended for RNA designation. | Retention |
| 7 | Maintain a pleasing, natural appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R24W
R23W
UPPER WHITEFISH FOREST
IV-55
T33N
Antice Pt
Spring Lakes
Stillwater
Upper Stillwater Lake
Dog Mtn
Dog Lake
McCabe Meadow
Ketowke Mtn
Martin Divide
Paul Mtn
STANDARD
PARALLEL
Martin Falls
Martin Lakes
Keith Mtn
Adams Mtn
Purple Mdw
Skunk Meadow
Round Meadow
Olney
WHITEFISH
IV-59
T32N
Lower Stillwater Lake
BURLINGTON NORTHERN
UPPER GOOD CREEK
IV-67
TALLY LAKE-MEADOW CREEK
IV-81
Fox Mtn
Shorts Meadow
Long Meadow
Hill Meadow
Tally Lake
T31N
17
2C
2
2D
29
15
12
7
28
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0 1 2 3 MILES

## OLNEY-MARTIN CREEK GEOGRAPHIC UNIT

# UPPER GOOD CREEK GEOGRAPHIC UNIT

41,200 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit encompasses all of the upper Good Creek drainage down to south of Adams Mountain. The Kootenai National Forest forms the western boundary of the Unit. This Unit is located in Flathead and Lincoln Counties.

Within this Geographic Unit are about 1,000 acres of privately owned land. These private holdings are isolated and accessible via the Good Creek Road.

This Unit consists of low-rolling hills varying in elevation from 4,200 feet at Good Creek south of Adams Mountain to 6,600 feet at Elk Mountain on the extreme western side of the Unit. Three other mountain peaks are over 6,000 feet in elevation along the southern edge of this Unit.

The Unit is underlain mostly by glacial tills intermingled with areas of glacially scoured bedrock. The lacustrine soils along Good Creek limit road construction and maintenance options.

A large portion of the Unit was burned during the 1910 and 1926 fires. The burned over areas have regrown in lodgepole pine stands. The remainder of the Unit is composed of old growth trees, primarily western larch and Douglas-fir. Timber productivity of the area is moderate to high.

Precipitation averages about 28-31 inches in this Unit each year. Snowfall accounts for about 55 percent of the precipitation and ranges around 150-200 inches. Temperatures are relatively warm. Winter lows are about 8°F, and summer highs are about 82°F.

This Geographic Unit contains eastern brook trout and resident westslope cutthroat trout fisheries.

Private lands in this Geographic Unit are limited. Visitors to the area generally perceive the Good Creek drainage as a reservoir of resources. The public uses this area for firewood, fish, big game, and berries.

This area is relatively low in visual and backcountry recreation significance.

## B. HISTORIC MANAGEMENT ACTIVITIES

Logging has been extensive in this Geographic Unit. The age class distribution of the area makes the lodgepole pine stands generally less susceptible to the mountain pine beetle epidemic; therefore, logging in the area was less extensive in recent years than it was further south on the Tally Lake Ranger District.

The entire Upper Good Creek Geographic Unit has been extensively roaded. Primary roads penetrate all of the main drainages. Four roads extend to the north out of the Unit crossing the divide on to the Kootenai Forest.

The main arterial road through the Unit is the Good Creek Road. Many roads are subject to seasonal or year-round closures to provide wildlife security from human disturbance.

Modification of the visual quality objectives were recommended by past management direction. The entire area has been primarily managed for timber production.

The Elk Mountain National Recreation Trail extends 9 miles along the divide north and south of Elk Mountain. Other than here, recreation management is limited.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- To provide secure habitat for moose during hunting season, restrict motorized access on selected local roads from September 1 to November 30. The desired unrestricted road density is approximately 1.3 to 1.8 miles per section.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

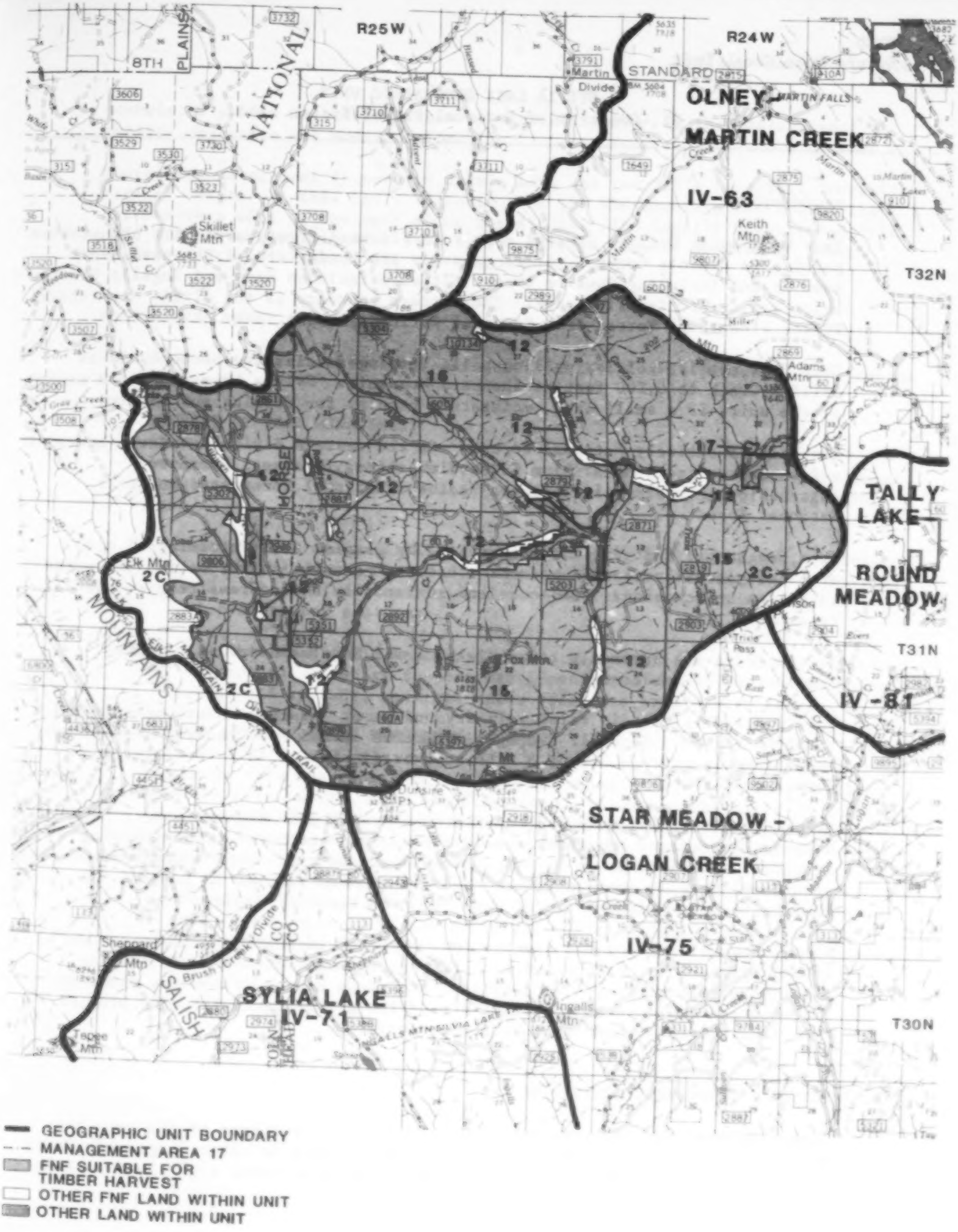
## 2. SUMMARY OF INSECT AND DISEASE MANAGEMENT

Currently this Geographic Unit is experiencing a major epidemic of the mountain pine beetle. The standing mature volume in this area is approximately 243 MMBF of which 115 MMBF is LP (lodgepole pine). Due to the age class and size of the LP, a significant portion of this LP (72 MMBF) is expected to be killed during the next 10-year period. All state of the art techniques will be used to deal with the current infestation. Salvage and regeneration harvest will be a major tool used to capture the value from the mortality. The 10-year timber sale offerings schedule highlites this need to cut these high priority areas in the current decade.

## 3. SUMMARY OF MANAGEMENT AREAS

The Upper Good Creek Geographic Unit contains portions of Forest-wide Management Areas as shown on the Geographic Unit map. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R25W
R24W
8TH PLAINS
NATIONAL
STANDARD
OLNEY – MARTIN CREEK
IV-63
Skillet Mtn
Keith Mtn
Martin Divide
Adams Mtn
T32N
T31N
T30N
HORSE
Elk Mtn
ELK MOUNTAINS
TRAIL
TALLY LAKE – ROUND MEADOW
IV-81
Fox Mtn
Dunsire Pt
STAR MEADOW – LOGAN CREEK
IV-75
SYLIA LAKE
IV-71
SALISH
Sheppard Mtn
Ingalls Mtn
Tepee Mtn
12
15
16
17
2C
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## UPPER GOOD CREEK GEOGRAPHIC UNIT

## SYLVIA LAKE GEOGRAPHIC UNIT
### 21,800 Acres of National Forest System Land

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### A. DESCRIPTION

This Geographic Unit is located mostly in Flathead County, but with the western portion in Lincoln County. It encompasses the headwaters of Sheppard Creek down to and including Dunsire Creek. It also includes Hand and Ingalls Creeks which drain into Griffin Creek. The western boundary is the divide separating Flathead National Forest from Kootenai National Forest.

This Unit consists of low rolling hills varying in elevation from 4,000 at Griffin Creek to 6,200 feet at Sheppard Mountain. Sylvia Lake, near the center of the unit, is a small lake, moderately popular for fishing and camping.

The Unit is entirely National Forest. On the western divide boundary, however, a few quarter sections of Plum Creek Timberland, Inc., and Champion International holdings lie between Flathead National Forest and Kootenai National Forest.

This Geographic Unit is underlain mostly by glacial till intermingled with areas of glacially scoured bedrock. Lacustrine soils in the basins are prone to slumps and erosion. Road cuts and surfaces in these areas require special treatment.

Tree species are primarily lodgepole pine and Engelmann spruce. Timber productivity is moderate.

This Geographic Unit is relatively dry and warm. Average annual precipitation is 28-31 inches. Snowfall averages about 200 inches each year. Temperatures range from an average low of 8°F to an average high of 82°F in winter and summer respectively.

Sylvia Lake contains grayling and is considered a good fishing area. Hand and Sheppard Creeks are important resident westslope cutthroat trout spawning streams. This Geographic Unit provides important year-round moose habitat. It also provides high quality grouse habitat. Summer habitat is present for whitetailed deer winter west of the divide in Pleasant Valley.

Visual significance of the area is low. Primary recreation activities focus around Sylvia Lake and the creeks. Recreation activities include fishing, picnicking, and camping. In addition, the roads may be driven for pleasure. Firewood gathering is an important use of the area. Several trails provide both foot and horseback recreation opportunities.

### B. HISTORIC MANAGEMENT ACTIVITIES

Timber harvest has occurred in recent years. Most portions of the area have been roaded; however, roading is less extensive than in other Geographic Units on the Tally Lake Ranger District. Seasonal or year-round road closures have restricted public motorized access on several roads. In the past, visual quality objective was modification.

Recreation management focused on Sylvia Lake and two NRT's (National Recreation Trails) located in this Unit. A portion of the Elk Mountain NRT skirts the northwestern edge of the unit along the divide. The Ingalls Mountains-Sylvia Lake NRT traverses this unit from Sylvia Lake to Ingalls Mountain. Other trails in the unit access the Elk Mountain Trail.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

- To provide secure habitat for moose during hunting season, restrict motorized access on selected local roads from September 1 to November 30. The desired unrestricted road density is approximately 1.3 to 1.8 miles per section.
- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and to protect the road surface, soil and water resources, and public safety.

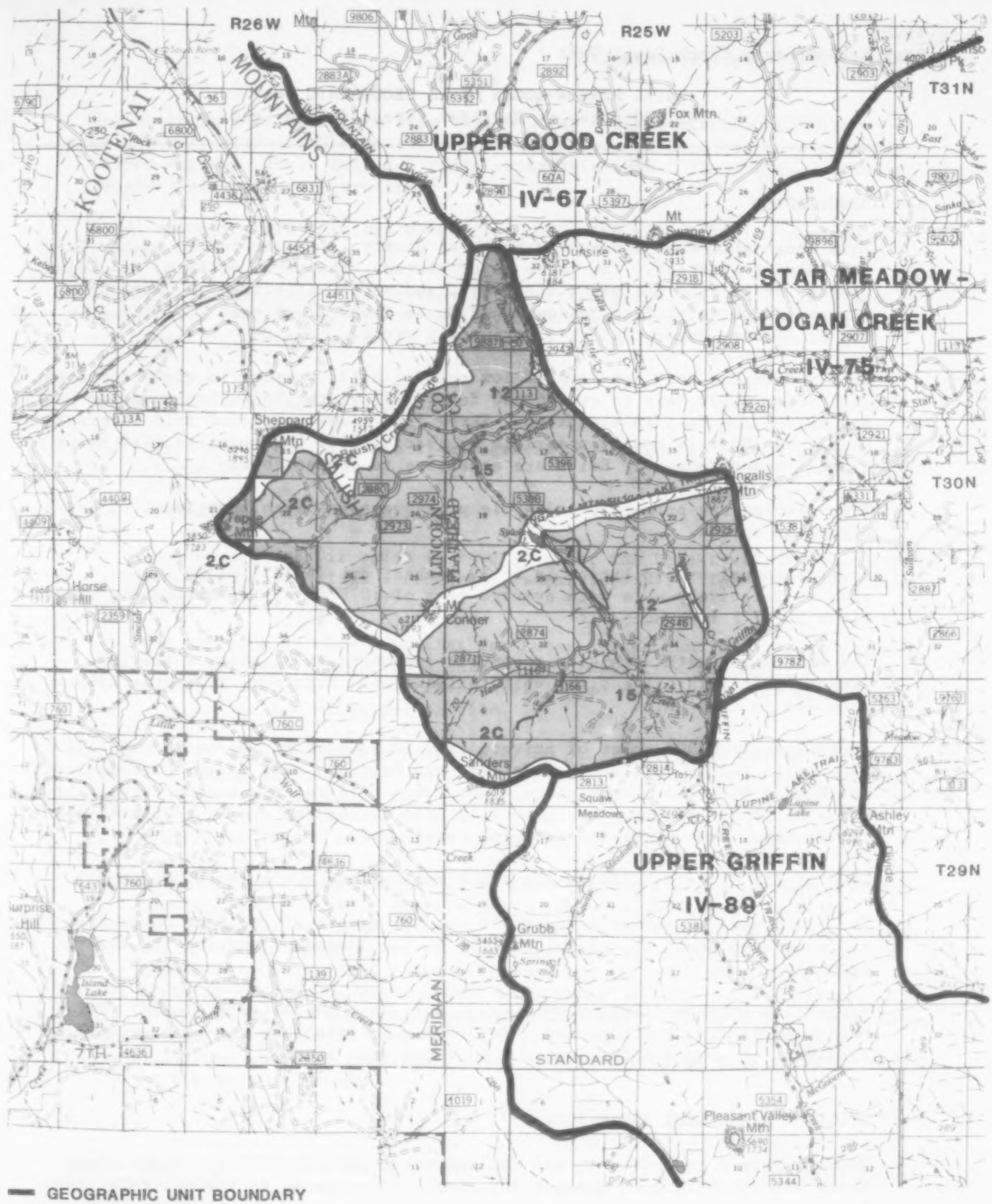
### 2. SUMMARY OF INSECT AND DISEASE MANAGEMENT

Currently this Geographic Unit is experiencing a major epidemic of the mountain pine beetle. The standing mature volume in this area is approximately 205 MMBF of which 118 MMBF is LP (lodgepole pine). Due to the age class and size of the LP, a significant portion of this LP (89 MMBF) is expected to be killed during the next 10-year period. All state of the art techniques will be used to deal with the current infestation. Salvage and regeneration harvest will be a major tool used to capture the value from the mortality. The 10-year timber sale offerings schedule highlights this need to cut these high priority areas in the current decade.

## 3. SUMMARY OF MANAGEMENT AREAS

The Sylvia Lake Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the goals, management emphasis, and visual quality objectives for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 7 | Maintain a pleasing, natural appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R26W
R25W
T31N
T30N
T29N
KOOTENAI
MOUNTAINS
UPPER GOOD CREEK
IV-67
STAR MEADOW-
LOGAN CREEK
IV-75
UPPER GRIFFIN
IV-89
Fox Mtn
Mt Swaney
Dunsire Pt
Sheppard Mtn
Tepee Mtn
Horse Hill
Mt Conger
Ingalls Mtn
Sanders Mtn
Squaw Meadows
Lupine Lake
Ashley Mtn
Grubb Mtn
Pleasant Valley Mtn
Surprise Hill
Island Lake
LINCOLN
FLATHEAD
MERIDIAN
STANDARD
7TH
2C
12
15
Divide
Griffin
Creek

- ▬ GEOGRAPHIC UNIT BOUNDARY
- -·- MANAGEMENT AREA 17
- ▨ FNF SUITABLE FOR TIMBER HARVEST
- ☐ OTHER FNF LAND WITHIN UNIT
- ▨ OTHER LAND WITHIN UNIT

0 1 2 3 MILES

## SYLVIA LAKE
## GEOGRAPHIC UNIT

## STAR MEADOW-LOGAN CREEK GEOGRAPHIC UNIT

49,000 Acres of National Forest System Land

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### A. DESCRIPTION

This Geographic Unit located in Flathead County is in the center of the Tally Lake Ranger District. The three major streams, Sheppard, Griffin, and Logan Creeks, drain from the west, southwest, and south respectively. The three streams converge at Star Meadow, then Logan Creek flows east to Tally Lake. The broad Star Meadow Valley is privately owned.

This geographic unit consists of low rolling hills varying in elevation from just under 4,000 feet to over 6,000 feet. Within the Unit five mountain peaks are over 5,300 feet in elevation. Three long ridges surround this Geographic Unit. The Unit is mostly underlain by glacial till intermingled with areas of glacial scoured lands. Soils are sensitive to compactible.

Tree species are primarily lodgepole pine, western larch, Douglas-fir, and Engelmann spruce.

Average annual precipitation is 26-29 inches; snowfall, 150-200 inches. The area is relatively warm with average lows of 10°F in winter rising to average highs of 82°F in summer.

The watersheds within this Unit contain important brook trout fisheries. Summer habitat is present for whitetailed deer. High quality grouse habitat is provided in this unit.

Approximately 6,000 acres of private land is located in the center of this Geographic Unit. This area is called Star Meadow. Much of the private land has been subdivided. Many parcels are being held as investments; others have homes built on them that are generally used during the summer as recreational residences. Some homes are occupied year round.

Some of the private holdings are still managed for agricultural purposes.

The purchasers of subdivided parcels and the owners of the Star Meadows Ranch are concerned about the visual quality of the landscape surrounding their property.

Recreation opportunities in this Geographic Unit are oriented toward Star Meadow. Fishing, hunting, and some driving for pleasure are primary uses of the area. Firewood gathering is popular in this area.

### B. HISTORIC MANAGEMENT ACTIVITIES

Timber harvest in this unit was limited until the mid-1950's. Upper Logan Creek has recently been managed for timber in response to the mountain pine beetle epidemic.

The northern portion of the Star Meadow-Logan Creek Geographic Unit is extensively roaded. The southern portion was also roaded but to a slightly lesser degree. Three arterial roads cross this unit. These have periodically received heavy logging traffic.

Local roads in this unit are closed seasonally to meet wildlife management objectives.

In the past, management direction has permitted modification of the visual landscape. Restrictive visual quality objectives were implemented only along the Logan Creek Road, north of Star Meadow.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- To provide secure habitat for moose during hunting season, restrict motorized access on selected local roads from September 1 to November 30. The desired unrestricted road density is approximately 1.8 to 2.2 miles per section.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

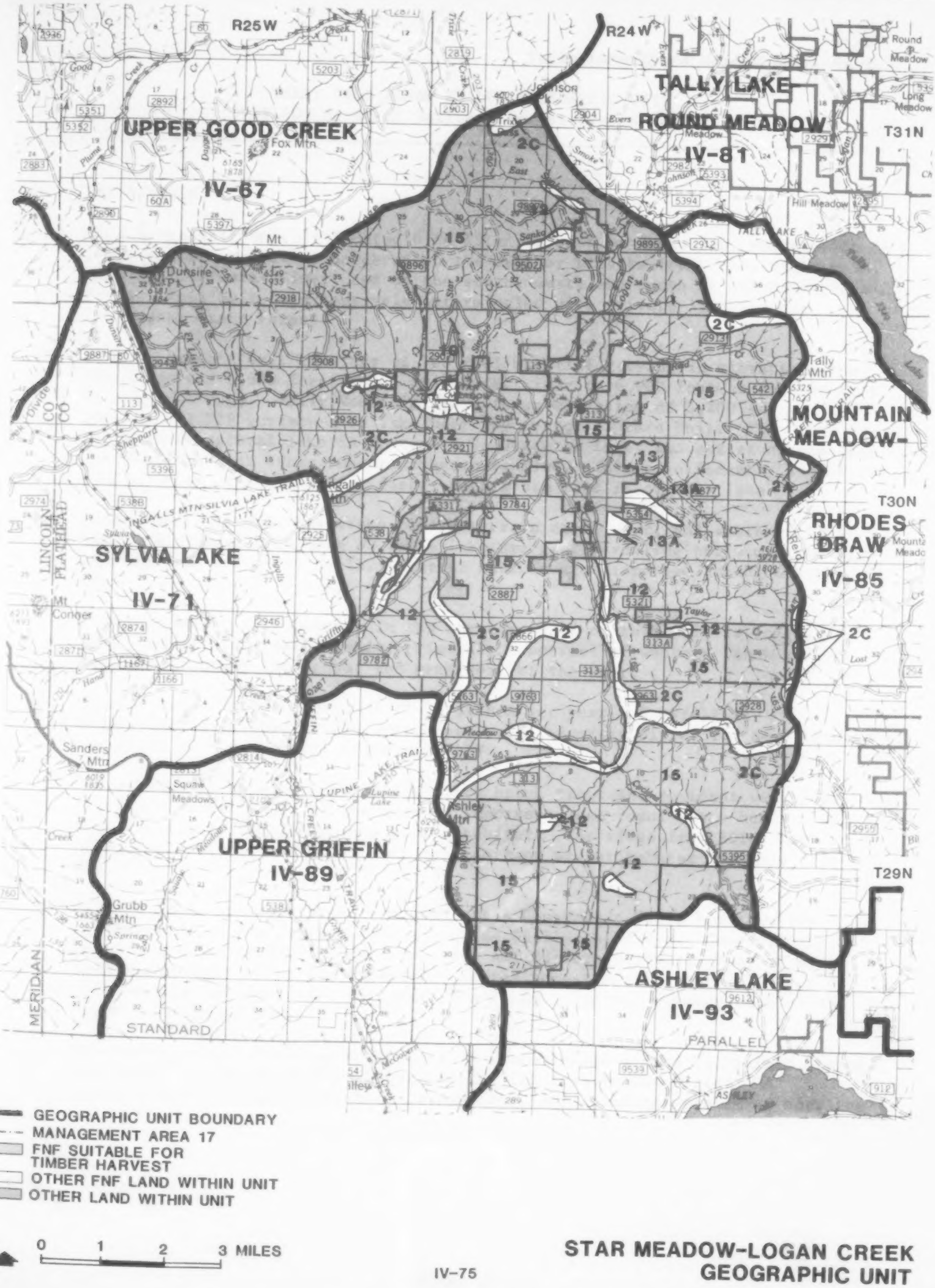
### 2. SUMMARY OF INSECT AND DISEASE MANAGEMENT

Currently this Geographic Unit is experiencing a major epidemic of the mountain pine beetle. The standing mature volume in this area is approximately 390 MMBF of which 150 MMBF is LP (lodgepole pine). Due to the age class and size of the LP, a significant portion of this LP (100 MMBF) is expected to be killed during the next 10-year period. All state of the art techniques will be used to deal with the current infestation. Salvage and regeneration harvest will be a major tool used to capture the value from the mortality. The 10-year timber sale offerings schedule highlights this need to cut these high priority areas in the current decade.

## 3. SUMMARY OF MANAGEMENT AREAS

The Star Meadow-Logan Creek Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 1 | Maintain present conditions with minimal investment for resource activities. | None Specified |
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2C | Provide a variety of roaded natural-appearing recreation opportunities. | Retention |
| 10 | Administrative site. | None Specified |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 13A | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R25W
R24W
T31N
T30N
T29N
UPPER GOOD CREEK
IV-67
TALLY LAKE-
ROUND MEADOW
IV-81
SYLVIA LAKE
IV-71
MOUNTAIN
MEADOW-
RHODES
DRAW
IV-85
UPPER GRIFFIN
IV-89
ASHLEY LAKE
IV-93
LINCOLN CO
FLATHEAD CO
MERIDIAN
STANDARD
PARALLEL
Johnson
Fox Mtn
Mt Dunsire
Tally Mtn
Mt Conner
Sanders Mtn
Squaw Meadows
Ashley Mtn
Grubb Mtn
Round Meadow
Long Meadow
Hill Meadow
Sylvia
Lupine Lake
INGALLS MTN-SILVIA LAKE TRAIL
LUPINE LAKE TRAIL
2C
12
13
13A
15
2A
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## STAR MEADOW-LOGAN CREEK GEOGRAPHIC UNIT

# TALLY LAKE-ROUND MEADOW GEOGRAPHIC UNIT
21,900 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located 6 to 15 miles west of Whitefish, Montana, in Flathead County. It is bordered on the east by private land, U.S. Highway 93, and the Stillwater River, and on the south, west, and north by other Geographic Units. This Unit is extensively intermingled with private land and the Stillwater State Forest.

This Geographic Unit consists of low rolling hills varying in elevation from approximately 3,000 feet at the Stillwater River to 6,000 feet at Johnson Peak on the west edge. Tally Mountain rises to an elevation of 5,200 feet. Tally Lake is a 1,326 surface-acre lake near the center of this Unit. This lake is the deepest natural lake in Montana. Because the inlet and outlet of the lake are close to each other, water exchange is slow. This significantly limits the productivity of the lake for fish. No private land is on this lake.

This Geographic Unit has steep, ledgy terrain east, west, and south of Tally Lake. Northeast and north of Tally Lake are gently rolling hills mantled with glacial till and silty soils. Several meadows are dispersed throughout the area.

The predominant tree species in the northern part of this Unit is lodgepole pine. Mixed old growth stands, primarily comprised of western larch and Douglas-fir occur throughout the remainder of the Unit.

Precipitation is low averaging 18-21 inches per year. Snowfall is correspondlingly low: 50-100 inches per year. Average winter low temperatures are about 12°F and summer highs are 81°F.

The streams in this Unit contain eastern brook trout and resident westslope cutthroat trout. Most of the area is important year-round moose habitat and high quality ruffed and spruce grouse habitat. The ridge from Pilot Knob north along the east side of Tally Lake is important winter habitat for mule deer and elk.

Private lands are scattered throughout this Geographic Unit, but they are concentrated on the eastern side along the Stillwater River. Some private lands have been subdivided into 5-, 10-, and 20-acre parcels. Many of these have been bought by people interested in the homesteader lifestyle. Much of this area is agricultural, with cattle and hay being the primary uses of the large, contiguous parcels.

Recreation use of the Geographic Unit is concentrated around Tally Lake during the summer and Round Meadows Cross-country Ski Area in the winter. A thirty-six unit campground, boat launch area, and swimming area exist near the inlet to Tally Lake. This is one of the very few areas of the lake where the shore is not too steep to permit recreation activities. Tally Lake Campground receives high levels of use, primarily from local residents. The Round Meadows area receives extensive cross-country ski use.

Other recreational activities in this Geographic Unit include driving for pleasure, snowmobiling, hunting, and fishing. Firewood gathering is also a popular activity. This area is relatively easy to access from Whitefish.

## B. HISTORIC MANAGEMENT ACTIVITIES

This area has a relatively long history of timber management for this part of Montana. Timber management has intensified since the 1960's. Roads have been constructed to provide access to most of the area; however, several contiguous areas of unaccessed land exist north of Round Meadows and west and east of Tally Lake. The Tally Lake Gorge, a pristine, steep canyon has not been heavily impacted by road or trail.

In the past, visual management concerns have focused on the area around Tally Lake. Recreation management activities have been directed toward Tally Lake Campground and Round Meadows, where a series of cross-country ski trails of various levels of difficulty have been constructed. The trail network is groomed by the Tally Lake Ranger District. Snowmobiles have been excluded from the area.

The Tally Mountain-Bill Creek Trail enters and ends in this Unit. Several roads in the area are restricted seasonally or year round.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- To provide secure habitat for moose during hunting season, restrict motorized access on selected local roads from September 1 to November 30. The desired unrestricted road density is approximately 1.8 to 2.2 miles per section.

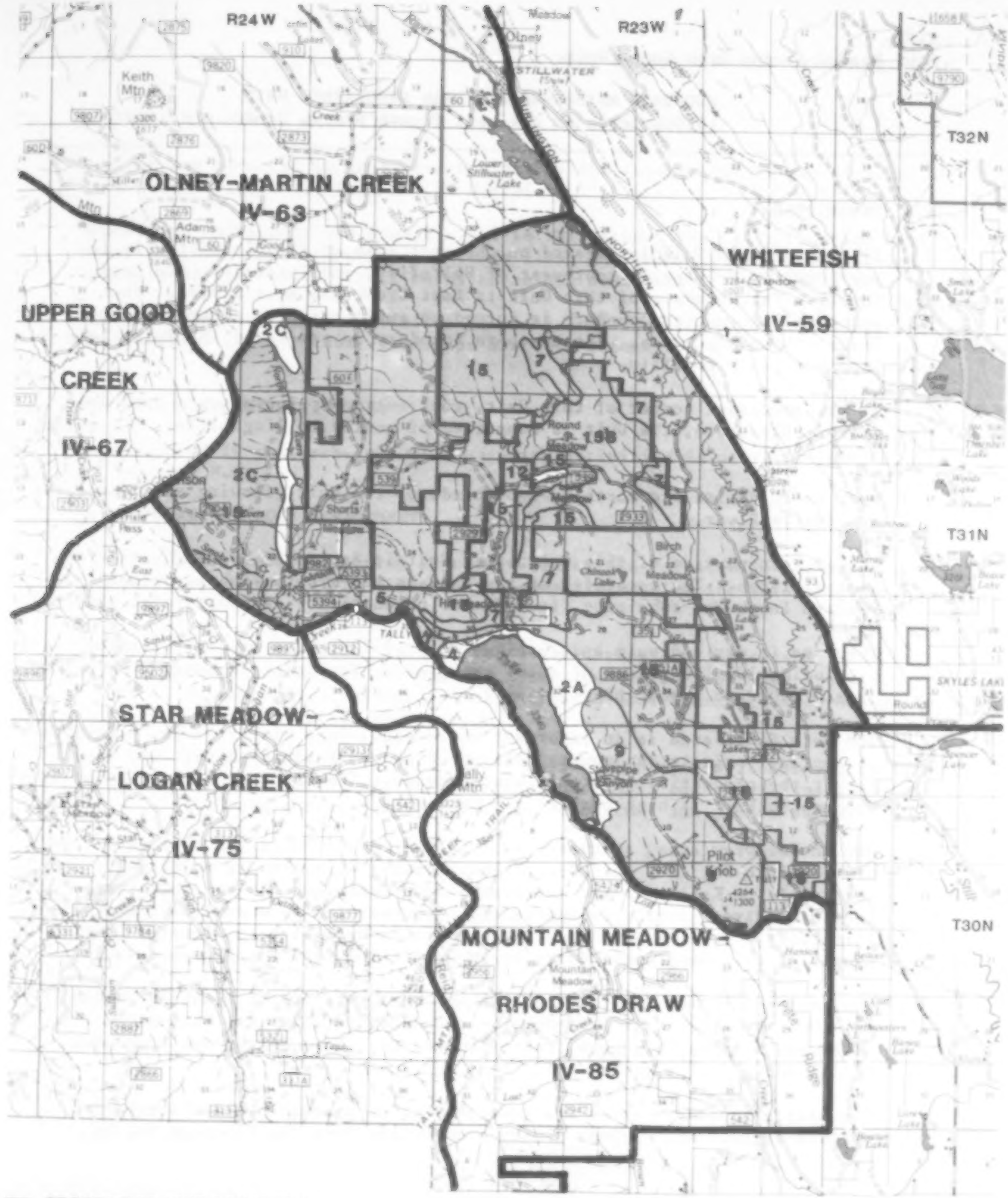
-- To eliminate user conflict, restrict all motorized vehicular access except for trail grooming equipment, in the Round Meadows Cross-country Ski Area from December 1 to May 15.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and to protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Tally Lake-Round Meadow Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive recreation opportunities. | Retention |
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 4 | Provide developed recreation opportunities. | Retention |
| 5 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, are not evident. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 9 | Provide cover and forage areas suitable for whitetailed deer winter habitat. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 15B | Emphasize cost-effective timber production with roads and special consideration for cross-county skiing. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R24W
R23W
T32N
T31N
T30N
OLNEY-MARTIN CREEK
IV-63
WHITEFISH
IV-59
UPPER GOOD CREEK
IV-67
STAR MEADOW-LOGAN CREEK
IV-75
MOUNTAIN MEADOW-RHODES DRAW
IV-85
Keith Mtn
Adams Mtn
Olney
Lower Stillwater Lake
Round Meadow
Birch Meadow
Chinook Lake
Stovepipe Canyon
Tally Mtn
Pilot Knob
Mountain Meadow
SKYLES LAKE
Spencer Lake
2C
15
7
19B
12
5
2A
9
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0 1 2 3 MILES

## TALLY LAKE-ROUND MEADOW GEOGRAPHIC UNIT

# MOUNTAIN MEADOW-RHODES DRAW GEOGRAPHIC UNIT
16,000 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located on the east side of the District. It is northwest of Kalispell, southwest of Whitefish, and located in Flathead County. The boundary of this Unit is Lost Creek and Reid Divide. The southern and eastern boundary is formed by small private, timber industry, and State of Montana lands. The northern boundary is generally the Tally Lake Road and Tally Mountain.

In the southeast corner of this Unit, rock outcrops rise sharply from Lost Creek. Elsewhere, the Unit is comprised of gently rolling hills. The soils are silty.

Lost Creek drains the northern two-thirds of the Unit, flowing south into the Stillwater River.

The eastern portion of this Geographic Unit is dominated by Douglas-fir and western larch. The remainder of the area is old-growth timber, primarily western larch and subalpine fir. Timber productivity is moderate to high.

The area is dry and warm and receives only 18-22 inches of precipitation (including 100-150 inches of snow) each year. Temperatures range from winter lows of 10°F to summer highs of 81°F.

The Pete Ridge area is an important whitetailed deer winter range. The State of Montana, private landowners, and the Flathead National Forest all may impact the productivity of this winter range. The Mountain Meadow-Rhodes Draw Geographic Unit is high quality grouse habitat.

The Rhodes Draw area, southeast of this Geographic Unit, has been extensively divided into 5-, 10-, and 20-acre homesteads. This area is relatively accessible to Kalispell and employment opportunities. At the same time, residents have a rural atmosphere and opportunities to pursue self-sufficient lifestyles. To a lesser extent, the Mountain Meadows area, located in the center of this Geographic Unit, has been divided into smaller parcels.

Residents of Rhodes Draw, as well as the residents of the Flathead Valley, use this Geographic Unit as a reservoir of renewable resources, including firewood, berries, big game, and upland birds. Some hiking and horseback riding occur in the area.

Visually significant areas are concentrated on the eastern and southern portion of this unit. Some slopes are visible from the Flathead Valley.

## B. HISTORIC MANAGEMENT ACTIVITIES

Logging has occurred in this area but not to the extent that it has occurred elsewhere on the Tally Lake Ranger District.

Recreation management has been limited in this area. The Tally Mountain-Bill Creek National Recreation Trail extends along the Reid Divide at the western boundary of this unit. Trail maintenance has been focused on this trail.

Visual management has been limited in the past also. Modification or maximum modification of the visual landscape has been recommended.[1]

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- To provide secure habitat for moose during hunting season, restrict motorized access on selected local roads from September 1 to November 30. The desired unrestricted road density is approximately 1.8 to 2.2 miles per section.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Mountain Meadow-Rhodes Draw Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 9 | Provide cover and forage areas suitable for whitetailed deer winter habitat. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |

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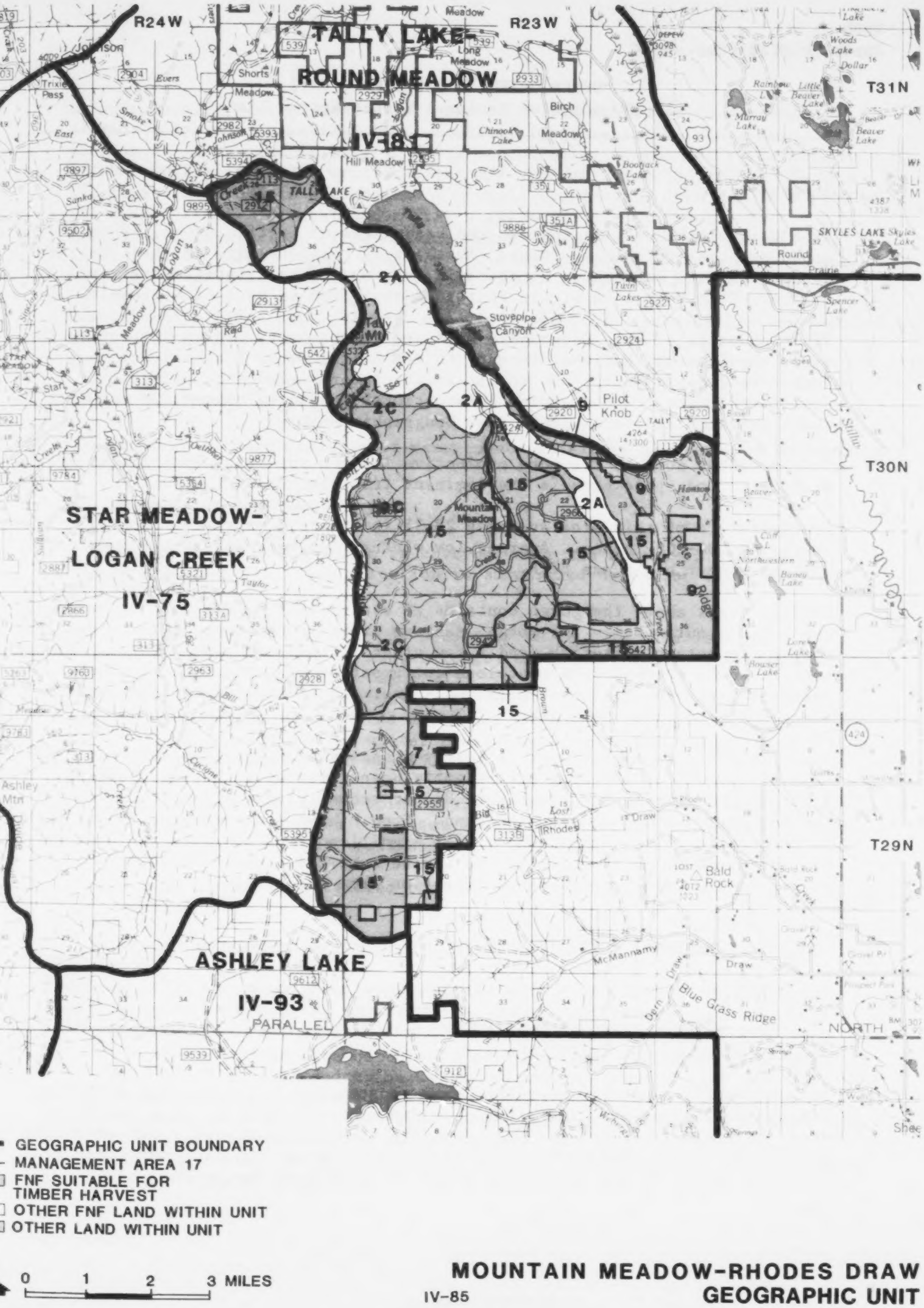
R24W
R23W
T31N
T30N
T29N
TALLY LAKE-ROUND MEADOW
IV-81
STAR MEADOW-LOGAN CREEK
IV-75
ASHLEY LAKE
IV-93
Tally Lake
Tally Mtn
Stovepipe Canyon
Pilot Knob
Mountain Meadow
Bald Rock
Rhodes
Blue Grass Ridge
McMannamy Draw
SKYLES LAKE
2A
2C
7
9
15
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## MOUNTAIN MEADOW-RHODES DRAW GEOGRAPHIC UNIT

## UPPER GRIFFFIN GEOGRAPHIC UNIT

22,000 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit encompasses the headwaters of Griffin Creek, which drains north and east into Logan Creek. At the very southern edge of this Unit are National Forest watersheds which drain into the Little Bitterroot River System. This Unit lies within Flathead County and is west of Kalispell.

The boundaries of this Geographic Unit are to the east, Ashley Divide; to the west, the Kootenai National Forest; to the north, other Flathead National Forest Geographic Units; and to the south, intermingled Plum Creek Timberlands, Inc., and Champion International holdings. About 500 acres of small private lands are within this Geographic Unit.

This area has some of the more productive land on the Tally Lake Ranger District. Lodgepole pine is the dominant tree species in the Unit.

Precipitation of this area averages 28-31 inches each year with snowfall averaging 100-200 inches. Average low winter temperatures are 8°F and average summer highs are 82°F.

Griffin Creek above the gorge contains an essentially pure strain of westslope cutthroat trout. Below the gorge, eastern brook trout is the primary species; however, mountain whitefish, and a few other species are also present. Lupine Lake has been stocked with westslope cutthroat trout. The Unit provides summer habitat for elk, moose, and mule deer and limited winter habitat for some moose and a few mule deer.

Upper Griffin Geographic Unit is easily accessed from Little Bitterroot Lake. Most of the use of the area has recently been firewood gathering, hunting, fishing, and driving for pleasure. Winter access provides opportunities for cross-country skiing and snowmobiling. Some hiking and horseback riding occur on the trails in the area. The visual significance of the area is low. The Griffin Creek Gorge adjacent to the Lupine Lake trailhead, however, is a scenic area drawing considerable attention from the public.

## B. HISTORIC MANAGEMENT ACTIVITIES

Recent timber management activities have been very extensive. The dominant tree species, lodgepole pine, was at high risk for infestation by mountain pine beetle; therefore, an accelerated harvest program was implemented here and elsewhere on the Tally Lake Ranger District.

An extensive transportation network was constructed in conjunction with the lodgepole pine harvest. An asphalt surfaced Forest arterial road was built along the full length of the Unit from the County access road north of Little Bitterroot Lake to Hand Creek. In addition to Upper Griffin Creek, this road provides access to and from other areas of Tally Lake Ranger District.

This Geographic Unit currently has grazing allotments on which domestic livestock (primarily cattle) were permitted to graze during the summer. Recreation management in this area was concentrated on two NRT's (National Recreation Trails). The Griffin Creek NRT runs north/south through the Unit. The Lupine Lake NRT is a short, gentle trail accessing a lake and is a popular day hiking trail. Several other trails exist in this Geographic Unit, including a trail along Ashley Divide which is accessed by other trails at several points, and trails along the two forks of Squaw Meadows Creek. The NRTs and other trails attract horseback riders as well as hikers.

Historically, the visual quality objectives permitted modification and maximum modification of the landscape.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Management Area 13 - As necessary to provide mule deer and elk undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15.

-- Management Area 9 - As necessary to provide whitetailed deer undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

Generally, the unrestricted road density will be 2 to 3.2 miles per section.

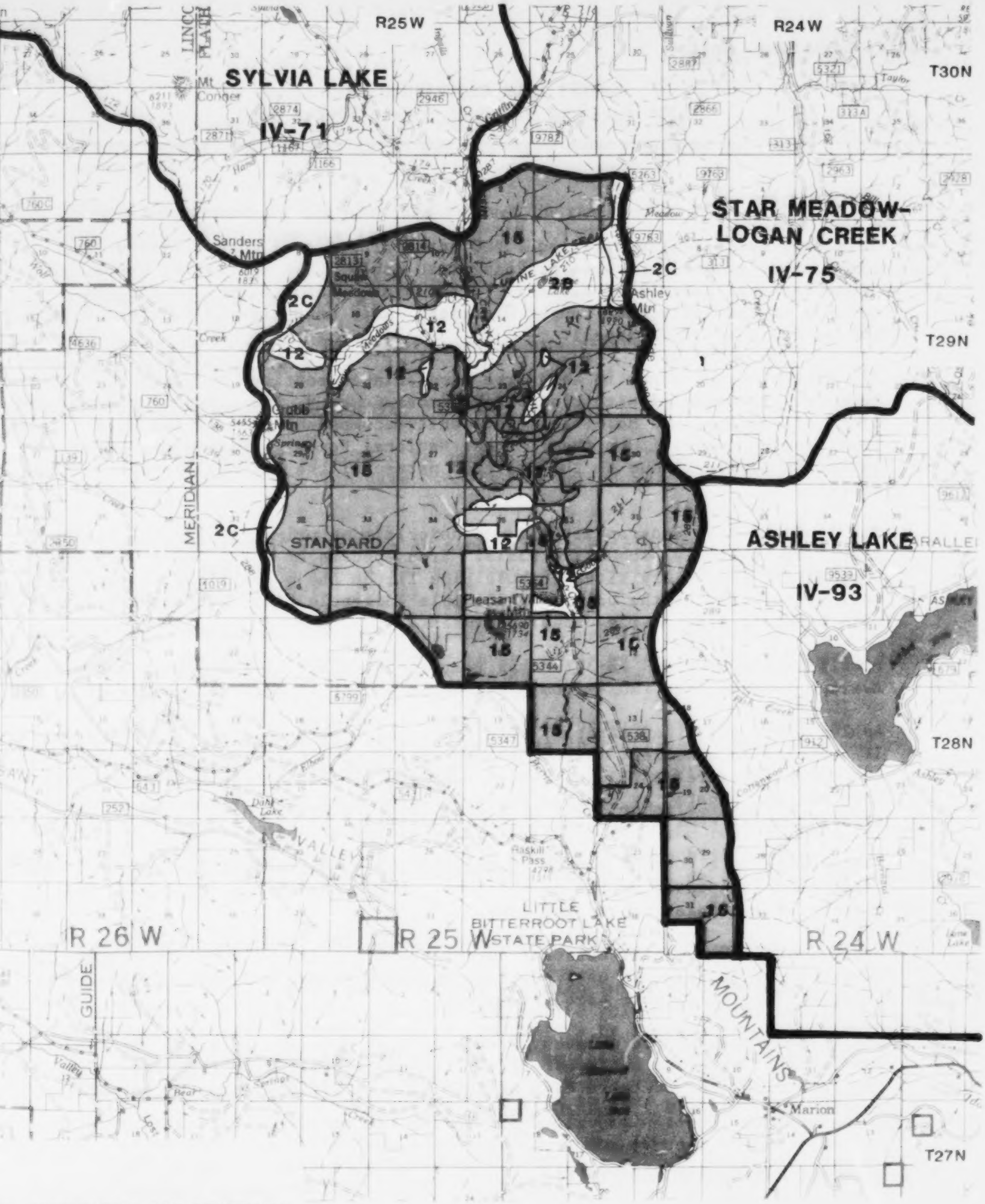
### 2. SUMMARY OF INSECT AND DISEASE MANAGEMENT

Currently this Geographic Unit is experiencing a major epidemic of the mountain pine beetle. The standing mature volume in this area is approximately 225 MMBF of which 144 MMBF is LP (lodgepole pine). Due to the age class and size of the LP, a significant portion of this LP (116 MMBF) is expected to be killed during the next 10-year period. All state of the art techniques will be used to deal with the current infestation. Salvage and regeneration harvest will be a major tool used to capture the value from the mortality. The 10-year timber sale offerings schedule highlights this need to cut these high priority areas in the current decade.

## 3. SUMMARY OF MANAGEMENT AREAS

The Upper Griffin Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R25W
R24W
T30N
SYLVIA LAKE
IV-71
Mt. Conger
Sanders Mtn
STAR MEADOW-
LOGAN CREEK
IV-75
Ashley Mtn
Squaw Meadows
2C
15
12
26
17
T29N
Grubb Mtn
MERIDIAN
STANDARD
ASHLEY LAKE
IV-93
Pleasant Valley Mtn
T28N
Dahl Lake
VALLEY
Haskill Pass
LITTLE
BITTERROOT LAKE
STATE PARK
R 26 W
R 25 W
R 24 W
GUIDE
MOUNTAINS
Marion
T27N

- GEOGRAPHIC UNIT BOUNDARY
- MANAGEMENT AREA 17
- ▨ FNF SUITABLE FOR TIMBER HARVEST
- ☐ OTHER FNF LAND WITHIN UNIT
- ▨ OTHER LAND WITHIN UNIT

0 1 2 3 MILES

## UPPER GRIFFIN
## GEOGRAPHIC UNIT

## ASHLEY LAKE GEOGRAPHIC UNIT
7,700 Acres of National Forest System Land

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### A. DESCRIPTION

This Geographic Unit containing 7,700 acres of National Forest System land encompasses some of the area draining into Ashley Lake and Ashley Creek, plus other isolated parcels of National Forest System land in this southeast portion of the Tally Lake Ranger District. This unit lies in Flathead County, and is due west of Kalispell.

All of the Forest lands in this area are isolated sections or parts of sections intermingled with Plum Creek Timber Company, Inc., small private, and State of Montana land holdings. This unit encompasses some of the most intermingled ownership on the Flathead National Forest. Management is extremely difficult due to the isolated nature of the National Forest parcels.

The lands of this Geographic Unit are underlain by primarily glacial tills, resulting in highly productive soils. Tree species on these lands vary from Douglas-fir on the dry sites to subalpine fir on the moist sites in the northern portion of the unit. Considerable lodgepole pine, currently infested with mountain pine beetle, is also present.

Precipitation averages 28-30 inches yearly. Snowfall is 150 inches annually. Average temperatures range from 9°F lows in winter to summer highs of 82°.

Ashley Lake, near the center of this Unit, has a surface area of 3,244 acres. It supports an excellent kokanee salmon and cutthroat trout fishery. Three of the tributary streams feeding Ashley Lake are closed to fishing because they have been designated by Montana State Department of Fish, Wildlife, and Parks as spawning streams for cutthroat trout.

Ashley Lake is a popular summer recreation site. A State of Montana campground is located on the north shore. Summer homes rim the lake. Ice fishing is a popular use of the lake.

Approximately 2 miles of National Forest shoreline are adjacent to Ashley Lake. These parcels are used for camping, picnicking, and fishing, but no sites or facilities have been developed.

The visual significance of much of this area is moderate to high. Most of the land north, west, and southwest of the lake is visible from the lake. Some of the land along the southern edge of this unit is visible from the community of Marion, U.S. Highway 2, and the Ashley Lake Road.

### B. HISTORIC MANAGEMENT ACTIVITIES

Very little of the National Forest System lands within this Geographic Unit have been managed for timber production. Access has been difficult to develop. Recently, some logging has been scheduled. Primary access has been the Ashley Lake Road.

Recreation management focused on the National Forest System lands along Ashley Lake. Several of the scattered parcels have been proposed for land exchanges.

Visual management in the past has focused on the lands north of Ashley Lake that are visible from the lake.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

- Management Area 13 - As necessary to provide mule deer and elk undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15.
- Management Area 9 - As necessary to provide whitetailed deer undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15.
- To provide wildlife security during hunting season, restrict vehicular access to selected roads in the area between Rand and Bernard Creeks from September 1 to November 30.
- In this Geographic Unit, apply no other motorized access restrictions except as necessary to protect the road surface, soil and water resources, wildlife resource, and public safety. Generally, the unrestricted road density will be 2 to 3.2 miles per section.

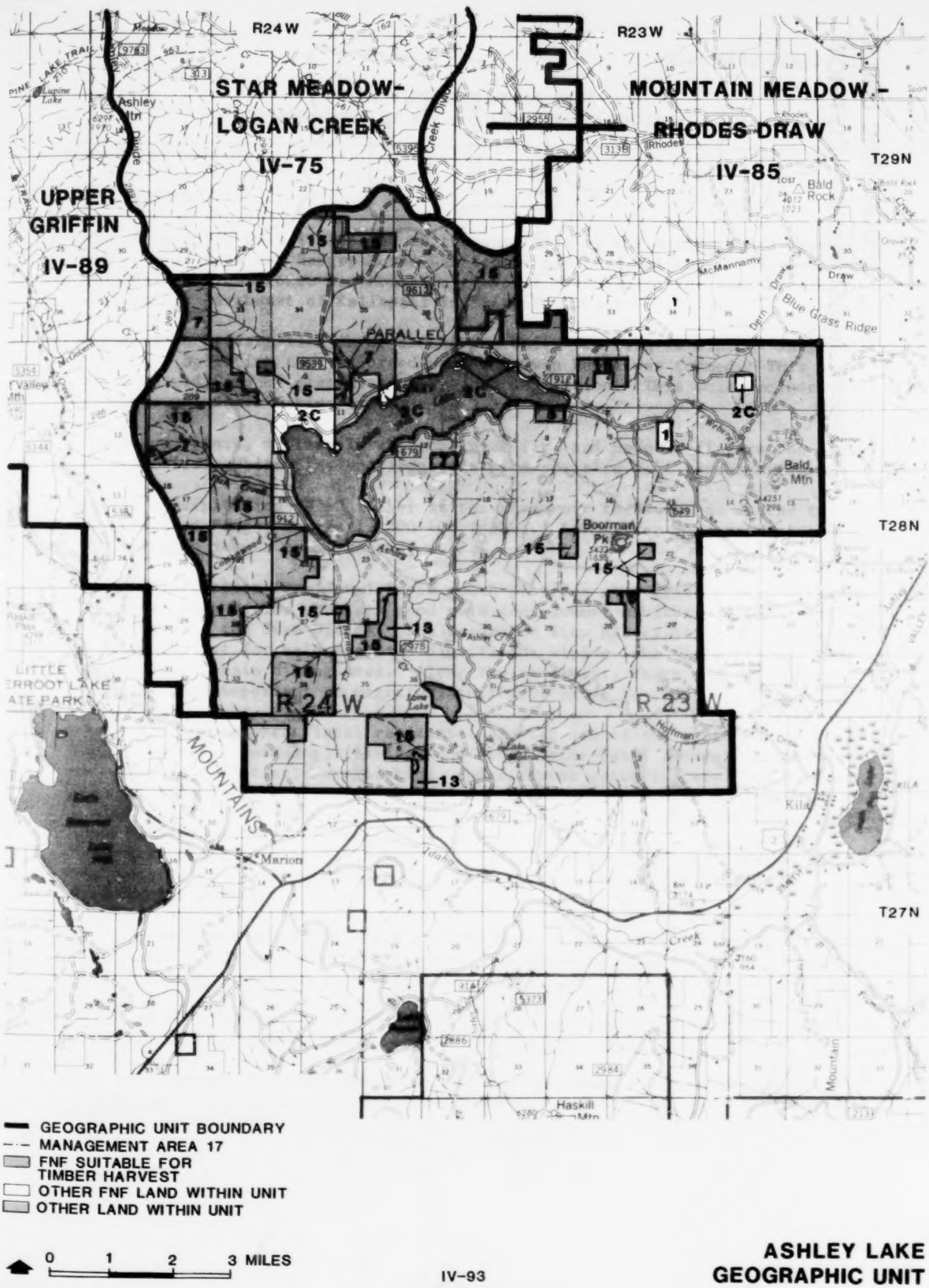
### 2. SUMMARY OF INSECT AND DISEASE MANAGEMENT

Currently this Geographic Unit is experiencing a major epidemic of the mountain pine beetle. The standing mature volume in this area is approximately 58 MMBF of which 26 MMBF is LP (lodgepole pine). Due to the age class and size of the LP, a significant portion of this LP (18 MMBF) is expected to be killed during the next 10-year period. All state of the art techniques will be used to deal with the current infestation. Salvage and regeneration harvest will be a major tool used to capture the value from the mortality. The 10-year timber sale offerings schedule highlights this need to cut these high priority areas in the current decade.

### 3. SUMMARY OF MANAGEMENT AREAS

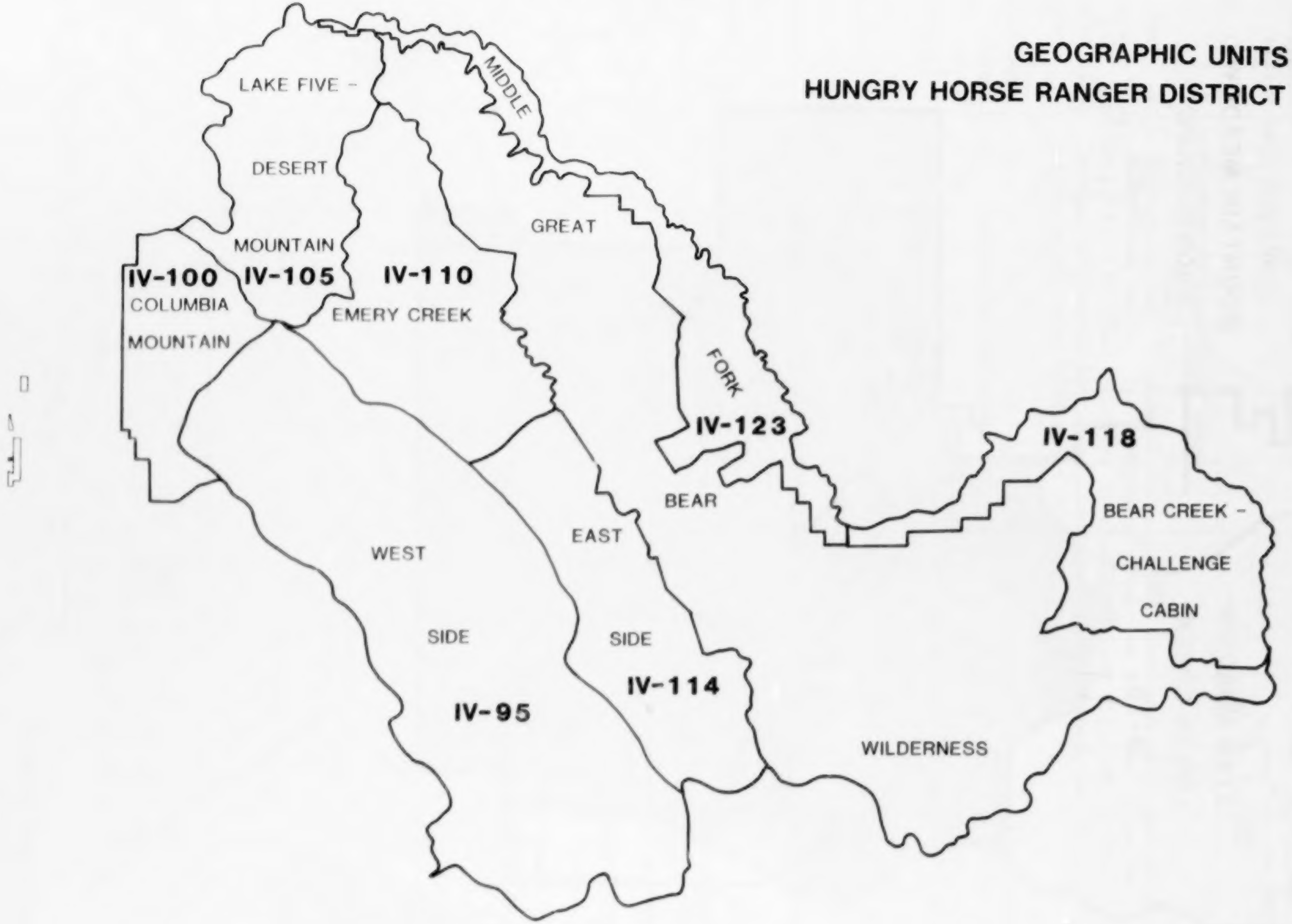
The Ashley Lake Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 1 | Maintain present conditions with minimal investment for resource activities. | None Specified |
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 5 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, are not evident. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |


R24W
R23W
STAR MEADOW-
LOGAN CREEK
IV-75
MOUNTAIN MEADOW -
RHODES DRAW
IV-85
UPPER
GRIFFIN
IV-89
T29N
T28N
T27N
Ashley Mtn
Lupine Lake
Rhodes
Bald Rock
McMannamy Draw
Blue Grass Ridge
PARALLEL
Bald Mtn
Boorman Pk
Lone Lake
Lake Monroe
R 24 W
R 23 W
LITTLE
BITTERROOT LAKE
STATE PARK
MOUNTAINS
Marion
Kila
Haskill Mtn
15
7
2C
1
13
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## ASHLEY LAKE
## GEOGRAPHIC UNIT

## GEOGRAPHIC UNITS
## HUNGRY HORSE RANGER DISTRICT


LAKE FIVE -
DESERT
MOUNTAIN
IV-105
MIDDLE
GREAT
FORK
IV-123
IV-100
COLUMBIA
MOUNTAIN
IV-110
EMERY CREEK
BEAR
IV-118
BEAR CREEK -
CHALLENGE
CABIN
WEST
SIDE
IV-95
EAST
SIDE
IV-114
WILDERNESS

## WEST SIDE GEOGRAPHIC UNIT
27,800 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located on the west side of the Hungry Horse Reservoir and extends from the Hungry Horse Dam to the mouth of Quintonkon Creek. The Swan Divide from Broken Leg Mountain to Doris Mountain is the west boundary. The Unit is southeast of Kalispell in Flathead County.

There is no private land in or around the Unit. Terrain is steep. This is a result of uplifting that occurred when the Swan Range was formed. This area has been modified by glacial scouring and deposition. This Unit includes part of the Jewel Basin Hiking Area.

Engelmann spruce, western larch, subalpine fir, and Douglas-fir are the primary tree species. White pine and lodgepole pine are also well represented.

Yearly precipitation is 35 inches at the reservoir to 90 inches at the top of the Flathead Range; snowfall, 200-400 inches. Low winter temperatures average 6°F and high summer temperatures, 81°F.

The high elevation from Jewel Basin south provides good grizzly bear denning habitat. Swan Divide provides good mule deer summer habitat. A population of goats inhabit the Swan Divide. The reservoir area has existing and potential nesting habitat for bald eagles. Significant alpine lake fisheries are located in the Jewel Basin Hiking Area. Along the reservoir, there are seven streams that are very important to migratory cutthroat trout for spawning.

There are no permanent local residents. Public use of the area is relatively high. Boating, swimming, fishing, and other water-based recreation activities are popular. Hunting, berrypicking, and firewood gathering are also active uses of this Unit. This west side of the reservoir gets more recreational use than the east side does, probably because several trails provide access to the Swan Divide and the Jewel Basin Hiking Area. The west side road along the reservoir provides access for people traveling to and from the Spotted Bear entryway to the wildernesses and the Bunker Creek and Sullivan Creek Backcountry areas.

Seven developed recreation sites include boat launch ramps, swimming areas, and campground and picnic area facilities. One of these campgrounds is located away from the reservoir at Handkerchief Lake.

Nineteen recreational residences have been allowed under special-use permit at Heinrude Creek, between the reservoir and the road.

The area between the west side road and the reservoir and some of the uphill slopes are visually significant. These areas can be viewed from the road as well as the reservoir itself.

## B. HISTORIC MANAGEMENT ACTIVITIES

Since the 1960's, this area has been extensively logged. Most of the roads needed to develop the area's transportation system are in place; however, some local roads will be needed to access specific stands of timber.

Historically, management of visual quality was focused on the corridor above the west side road. The visual quality objective (VQO) was partial retention. In addition, a retention VQO was specified for the first three major drainages south of the dam--Doris, Lost Johnny, and Wounded Buck Creeks. Elsewhere, modification or maximum modification visual quality objectives were acceptable.

Developed recreation management has been concentrated along the reservoir. More developed recreation opportunities exist in this area than anywhere else on the Flathead National Forest.

Dispersed recreation management has focused on the trails that lead to the Swan Crest or Jewel Basin. Several of these trails have been shortened by timber harvest activities.

Several roads in this Unit are closed seasonally. Jewel Basin Hiking Area is closed to all motor vehicles and livestock use.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- To provide security to grizzly bears, restrict motorized access in the following areas from September 1 to November 30: Kate Creek, Trapper Creek, Battery Mountain, Pioneer Ridge (Road No. 895D), and Aeneas Creek. Restrict motorized access on newly constructed climbing roads in Wheeler and Graves Creeks from September 1 to November 30.

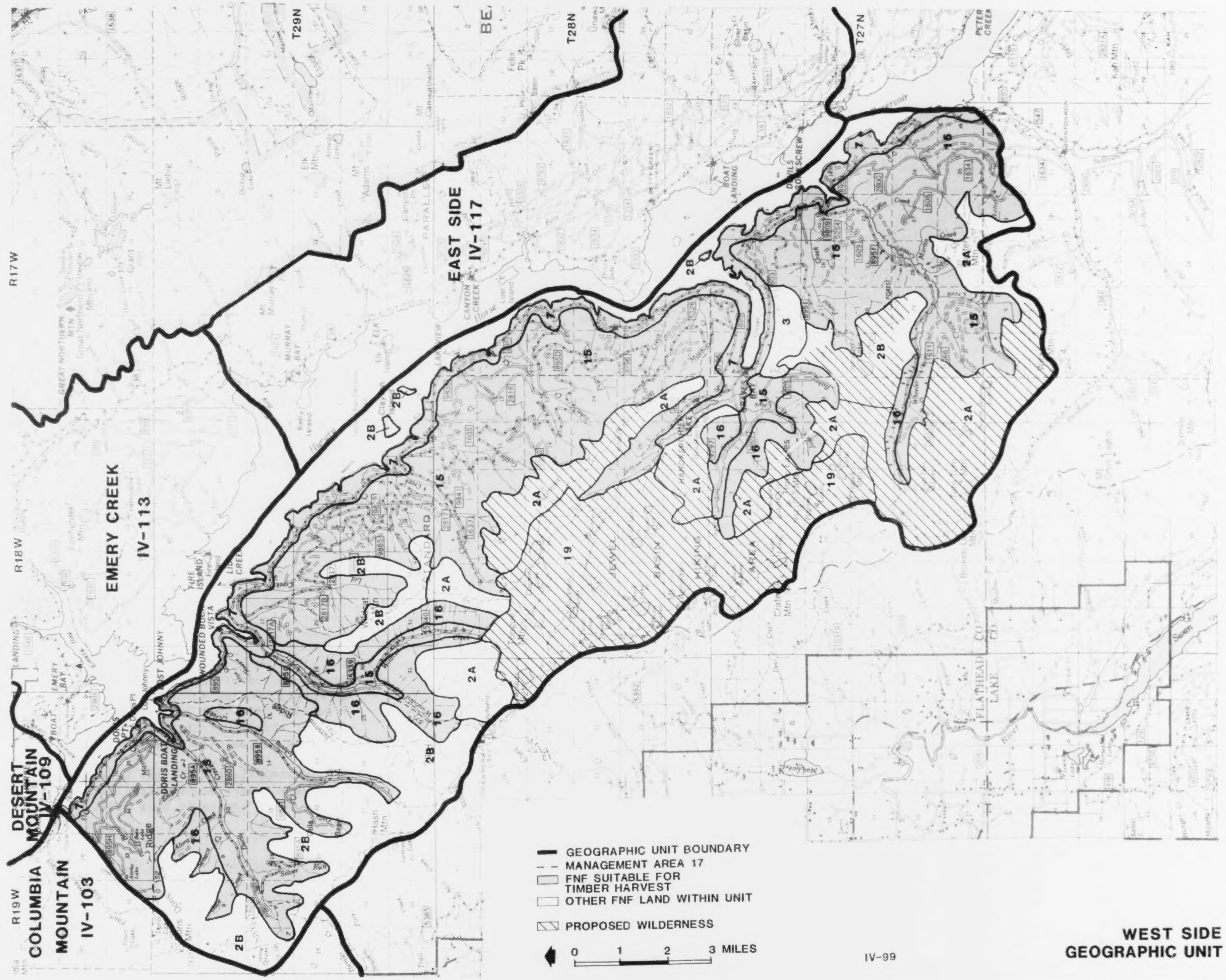
-- To protect existing and potential bald eagle nesting trees, restrict motorized access year round between Road 895 and Hungry Horse Reservoir. An exception is made for roads accessing developed recreation sites.

-- In this Geographic Unit, apply no other motorized road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The West Side Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |
| 19 | Manage for hiking activities. | Preservation |


GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
PROPOSED WILDERNESS
0
1
2
3 MILES
EAST SIDE IV-117
EMERY CREEK IV-113
DESERT MOUNTAIN IV-109
COLUMBIA MOUNTAIN IV-103
JEWEL BASIN HIKING AREA
FLATHEAD CO.
LAKE CO.
DORIS BOAT LANDING
WOUNDED BUCK VISTA
DEVILS CORKSCREW
BOAT LANDING
T29N
T28N
T27N
R17W
R18W
R19W
2A
2B
3
7
15
16
19

# WEST SIDE GEOGRAPHIC UNIT

## COLUMBIA MOUNTAIN GEOGRAPHIC UNIT

18,200 Acres of National Forest System Land

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### A. DESCRIPTION

This Geographic Unit is surrounded by private land on the west, Hemler Creek on the south, Blaine Mountain and Doris Mountain on the southeast, the South Fork of the Flathead River up to Hungry Horse Dam on the northeast, and the Flathead River as it runs through Badrock Canyon on the north. Kalispell lies approximately 10 air miles to the west. The Unit is in Flathead County.

There are small private landholdings around the north and west perimeters of the Unit. The terrain is steep. West facing slopes have been steepened by the combined action of faulting and glacial scouring. Several small cliffs exist on the west side of the mountain at the base of the steepened areas. Badrock Canyon is a steep-walled canyon which separates Teakettle Mountain on the north side from the Swan Range.

Primary species are Engelmann spruce, subalpine fir, western larch, and Douglas-fir. On the west facing slopes, western larch and Douglas-fir predominate with some lodgepole pine.

Average yearly precipitation is 25 inches at low elevations and 80 inches at high elevations. Snowfall is about 150 inches at the base of the area and over 600 inches at the top of the mountains. Low temperatures in winter are about 10°F. High temperatures in summer are about 80°F.

The lower elevations on the west side of the Unit provide winter habitat for mule deer and elk. The higher elevations provide mule deer and elk summer habitat.

The Columbia Mountain Geographic Unit does not contain private lands within its boundaries; however, on the northeast side are located Hungry Horse Dam and its associated facilities, including transmission lines. On the north side is the town of Hungry Horse, and to the west lies the community of Columbia Heights and the Flathead Valley.

The steep, unroaded nature of Columbia Mountain itself restricts local residents and others from utilizing the resources of the area. Because of its steepness, Columbia Mountain looms above the people living around it. Visually, this unit is very important. Visitors to Hungry Horse Dam view one face of this mountain; residents and visitors to the Upper Flathead Valley and Bad Rock Canyon view another.

The predominate use of this Geographic Unit is recreational. Hikers, horseback riders and motorcyclists use the trails that access the Alpine Trail, which begins in this Unit.

## B. HISTORIC MANAGEMENT ACTIVITIES

The only logging in this Unit has occurred in the vicinity of Lake Blaine. As noted above, there have been no roads developed for logging activities in this Unit. One road was built up the South Fork for construction of the powerline. For the most part the topography and the restrictions associated with the dam facilities have limited road construction opportunities.

In the past, management did not identify visual concerns for this area. The area facing east, however, and the South Fork of the Flathead River would have been left undisturbed by timber management activities. Modification and or maximum modification of the north and west faces of Columbia Mountain would have been acceptable.

Recreation management focused on the three trails accessing the Alpine Trail which provide motorized vehicle, hiking, or horseback riding access. A power transmission line operates under special-use permit along the South Fork of the river below Hungry Horse Dam.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

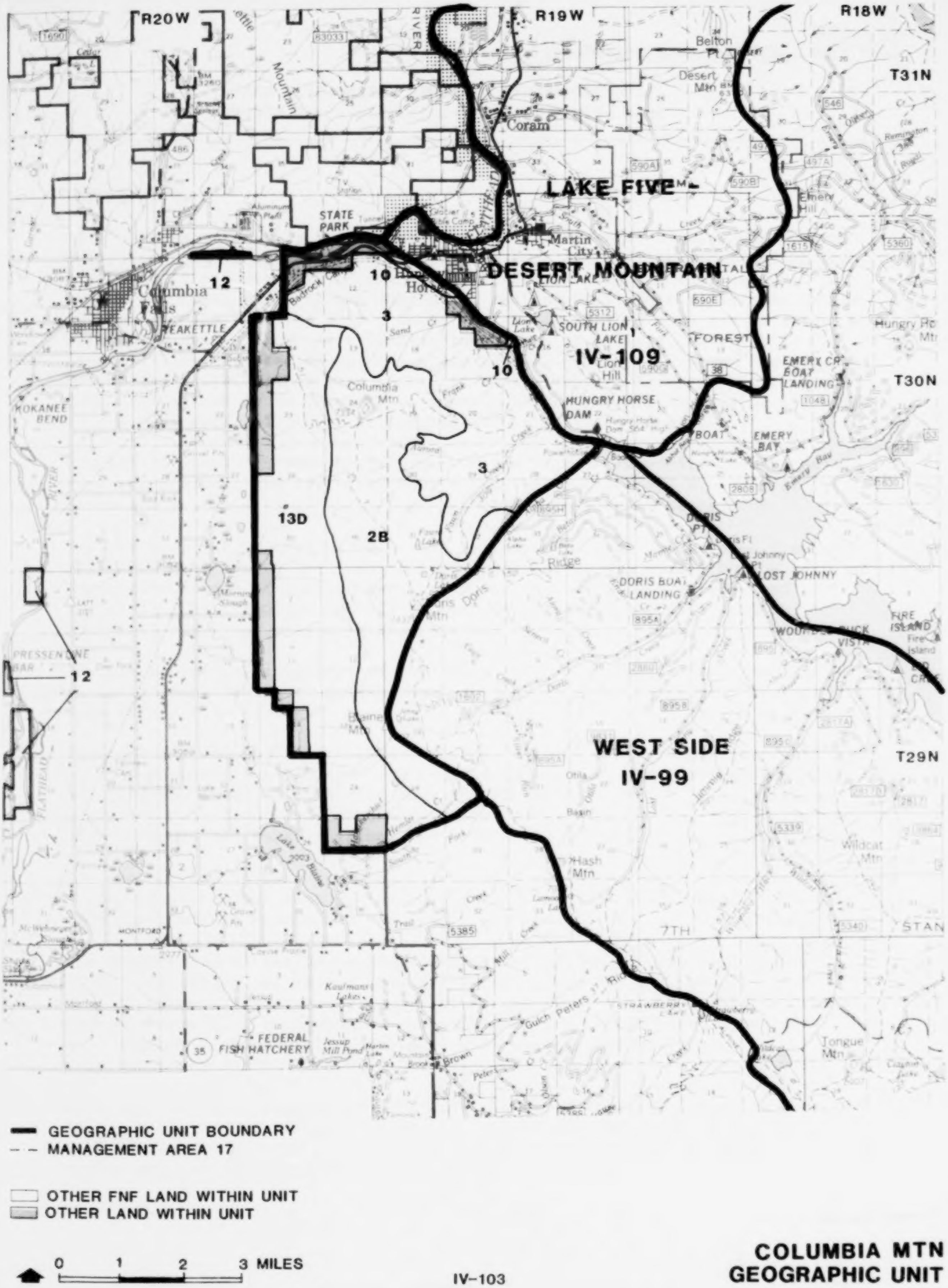
-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- In this Geographic Unit, apply no road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Columbia Mountain Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 10 | Administrative site | None Specified |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13D | Provide cover and forage areas suitable for mule deer and elk winter habitat. Area is not suitable for timber harvest. | Partial Retention |


R20W
R19W
R18W
T31N
T30N
T29N
LAKE FIVE
DESERT MOUNTAIN
IV-109
WEST SIDE
IV-99
12
10
3
13D
2B
Columbia Falls
STATE PARK
Coram
Belton
Desert Mtn
Martin City
Hungry Horse
SOUTH LION LAKE
Lion Hill
FOREST
HUNGRY HORSE DAM
EMERY CR BOAT LANDING
EMERY BAY
Emery Hill
Hungry Horse Mtn
Columbia Mtn
Doris Mtn
DORIS BOAT LANDING
LOST JOHNNY
WOUNDED BUCK VISTA
FIRE ISLAND
KOKANEE BEND
PRESSENTINE BAR
Blaine Mtn
Lake Blaine
Hash Mtn
Wildcat Mtn
Tongue Mtn
MONTFORD
FEDERAL FISH HATCHERY
Jessup Mill Pond
Kaufmann Lakes
STRAWBERRY LAKE
FLATHEAD RIVER
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## COLUMBIA MTN GEOGRAPHIC UNIT

# LAKE FIVE-DESERT MOUNTAIN GEOGRAPHIC UNIT

22,300 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located between the town of West Glacier and Hungry Horse Dam. It is surrounded by the Middle Fork of the Flathead River on the northwest; the South Fork of the Flathead River (below the dam) on the southwest; Emery Ridge on the southeast; and the Great Bear Wilderness on the northeast. The towns of Hungry Horse, Coram, and Martin City are located within the Unit. There is a substantial amount of private land. It is generally concentrated along both sides of U.S. Highway 2. Coram Experimental Forest is located within this Unit. It is a Biosphere Reserve and is dedicated primarily to research on western larch. Kalispell lies 30 air miles to the southwest. The unit is located within Flathead County.

Slopes are gentle to moderately steep in the western two-thirds of the unit. They are steep in the east near Desert Mountain. There are a number of pot holes and isolated small hills that resulted from glacial deposition.

The primary tree species in this unit is lodgepole pine regenerated from the 1929 Half Moon Fire. The Coram Experimental Forest was missed by the fire and has mature stands of western larch, Douglas-fir, Engelmann spruce, and lodgepole pine. Smaller amounts of western white pine, cedar, hemlock, ponderosa pine, and whitebark pine are also found.

Average annual precipitation of this Unit is 30-40 inches. Snowfall is 150 inches. Temperatures range from average lows of $4^{\circ}$F in winter to average highs of $80^{\circ}$F in summer.

Isolated elk and mule deer winter habitat is found on suitable aspects in the Lake Five area. The lowland area is important spring grizzly bear habitat. The Flathead River which skirts this Unit is an important fish passage for migrating bull trout and cutthroat trout. It is also an important spawning and travelway for kokanee salmon enroute to the McDonald Creek spawning area.

The communities in this Geographic Unit form the "Trapline." This area is a series of very small communities nestled in a canyon between steep forested mountains and the Flathead River.

The orientation of canyon residents is toward Columbia Falls as a market center and employment base. Some residents do work in the canyon area itself. Summer is extremely important to the local economy. Numerous cafes, stores, commercial campgrounds, and motels depend on the tourist traffic on U.S. Highway 2, much of it associated with Glacier National Park, to supplement the daily trucking activity.

Residents of the area seem to take pride in their physical isolation from the Flathead Valley and struggle to maintain the community identity and spirit of each little town in the canyon; however, the areas between the towns are being subdivided, and distinct boundaries are being blended.

This Unit has moderate to high visual significance. Some portions of the National Forest System lands are visible from Highway 2 and the Trapline communities.

Recreational use of the area is relatively high because of the easy access afforded to the Forest and to the river. Hunting, floating, and fishing are popular uses. The topography indicates the area would be well suited for cross-country skiing opportunities. A salmon snagging site near West Glacier receives considerable use. Boating, floating, and swimming in the Middle Fork of the Flathead River have increased in recent years. There are several access sites. Firewood cutting occurs throughout the unit.

## B. HISTORIC MANAGEMENT ACTIVITIES

Moderate timber harvest has occurred. The 1929 wildfire was salvage logged. Generally, most of the Unit has been accessed. Some additional local road construction will be needed if timber management activities are to continue.

The Coram Experimental Forest is located in this unit and logging has been done to gather research data.

Wildlife habitat management is complicated by the intermingled landownership. Subdivision and human activities associated with the towns and use of the Wild and Scenic River have impacts on the big-game winter range and spring and fall use of the area by grizzly bears.

Past management direction recommended partial retention visual quality objectives for all the lands that were considered suitable for timber management.

Developed recreation management within this Geographic Unit was focused on several picnic, swimming, and boat launch sites. A visitor information center, located at Hungry Horse Dam, has been managed by the Bureau of Reclamation. The Middle and South Forks of the Flathead Wild and Scenic River are classified as Recreational within this Unit. Three river access sites exist: one at Blankenship Bridge, one at West Glacier, and the other at Hungry Horse. There have been no maintained trails in this unit.

A resort located on Highway 2 has operated on National Forest System land under special-use permit. Several other resorts exist in close proximity to National Forest System lands. Several roads have been closed seasonally to protect wildlife.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- Management Area 13 - As necessary to provide mule deer and elk undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15.

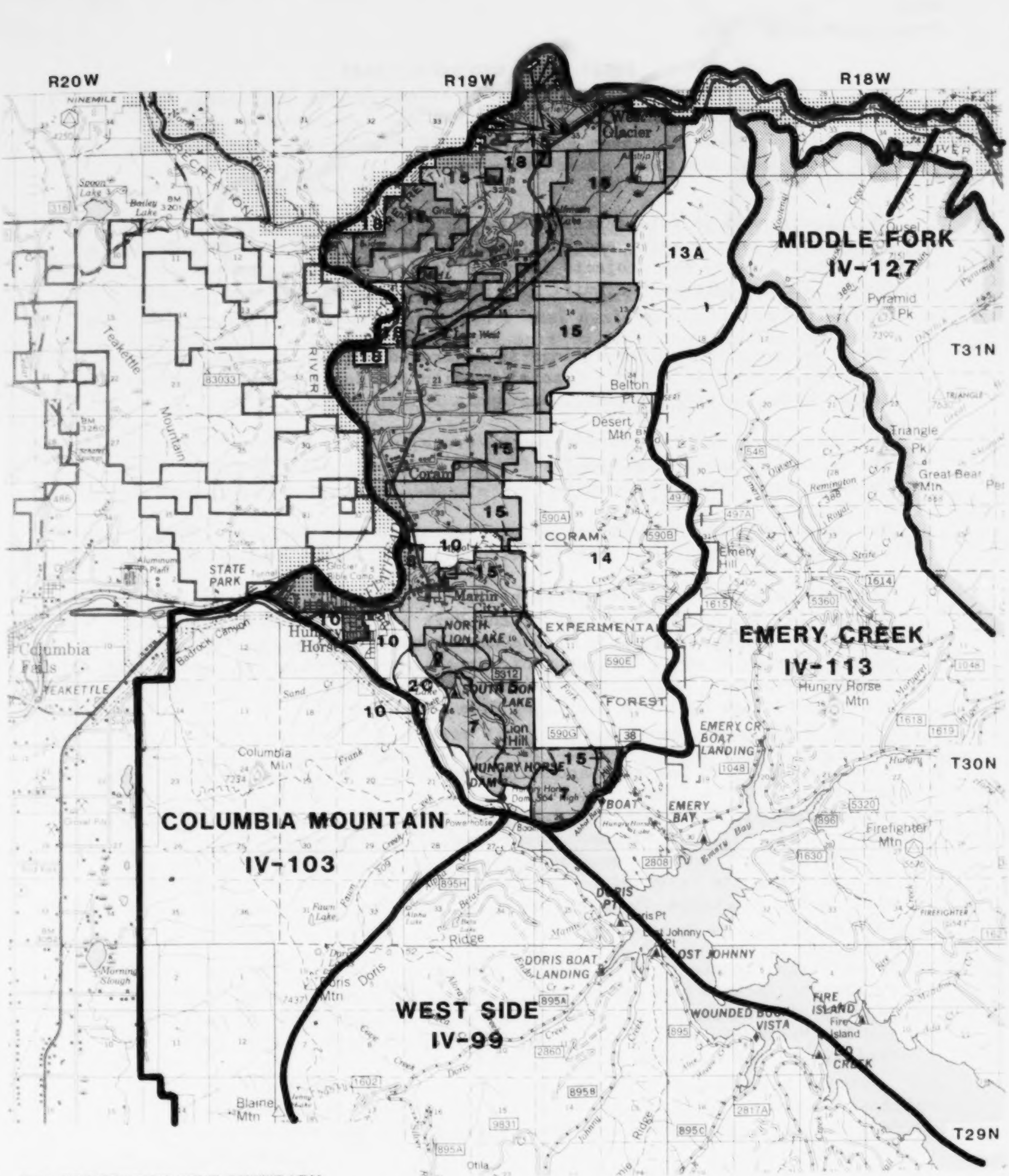
-- From West Glacier to Coram, restrict motorized access on local roads from October 15 to July 1 to maintain security for grizzly bears using this area as a travel corridor and to provide cross-country skiing opportunities.

-- In this Geographic Unit, apply no other motorized road access restrictions except as necessary to meet Management Area objectives; and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Lake Five-Desert Mountain Geographic Unit contains portions of Forest-wide Management Areas as shown on the Geographic Unit map. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 8 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management without roads, do not dominate. | Partial Retention |
| 9 | Provide cover and forage areas suitable for whitetailed deer winter habitat. | Partial Retention |
| 10 | Administrative site | None Specified |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13A | Provide cover and forage areas suitable for mule deer and elk winter habitat. Area not suitable for timber harvest. | Modification |
| 14 | Emphasize research to provide ecological and silvicultural information. | None Specified |
| 15 | Emphasize cost effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |
| 18 | Provide optimum opportunity for public use and enjoyment (Flathead Wild and Scenic River). | Partial Retention |


R20W
R19W
R18W
T31N
T30N
T29N
MIDDLE FORK
IV-127
EMERY CREEK
IV-113
COLUMBIA MOUNTAIN
IV-103
WEST SIDE
IV-99
13A
15
18
10
14
7
2
2C
West Glacier
Coram
Martin City
Hungry Horse
Columbia Falls
STATE PARK
CORAM
EXPERIMENTAL
FOREST
NORTH LION LAKE
SOUTH LION LAKE
Lion Hill
HUNGRY HORSE DAM
Belton Pt
Desert Mtn
Emery Hill
Hungry Horse Mtn
Firefighter Mtn
Pyramid Pk
Triangle Pk
Great Bear Mtn
Columbia Mtn
Doris Mtn
Blaine Mtn
Doris Pt
Lost Johnny Pt
DORIS BOAT LANDING
EMERY CR BOAT LANDING
EMERY BAY
WOUNDED BUCK VISTA
FIRE ISLAND
Teakettle Mountain
RIVER
Badrock Canyon

- GEOGRAPHIC UNIT BOUNDARY
- MANAGEMENT AREA 17
- ▨ FNF SUITABLE FOR TIMBER HARVEST
- ☐ OTHER FNF LAND WITHIN UNIT
- ▨ OTHER LAND WITHIN UNIT

0 1 2 3 MILES

## LAKE FIVE-DESERT MTN GEOGRAPHIC UNIT

# EMERY CREEK GEOGRAPHIC UNIT
34,500 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is surrounded by the Great Bear Wilderness on the east; Emery Ridge on the west; and Hungry Horse Reservoir north of Riverside Bay on the south. Emery Bay projects into the Unit. Firefighter Mountain is a well known landmark within the Unit. The Unit is east of Kalispell in Flathead County.

There are no private landholdings in or around this Unit. Terrain is moderately steep to steep. Glacial erosion and deposition have affected the entire area, leaving rounded topographic forms.

The major tree species are Engelmann spruce, western white pine, and subalpine fir in the drainages and Douglas-fir and lodgepole pine in the uplands. Western larch is mixed throughout.

The area receives 35-60 inches of precipitation each year and 200-350 inches of snowfall. Winter lows average 6°F and summer highs average 80°F.

There is mule deer and elk winter habitat on Firefighter Mountain near the reservoir. The high elevations of the Unit adjacent to the Great Bear Wilderness are prime grizzly bear summer habitat. They are also desirable winter denning areas. The reservoir area provides potential nesting habitat for bald eagles. This Unit contains significant westslope cutthroat trout spawning streams for fish migrating from the reservoir.

There are no permanent residents of this Geographic Unit; however, the close proximity to towns and easy accessibility of the area lead to relatively heavy use by the public. Recreation activities include driving for pleasure, hunting, fishing, picnicking, and camping. Hiking is limited but occurs in the vicinity of Great Northern Mountain. This Geographic Unit is very popular for berrypicking and firewood gathering. Two developed recreation sites are located along the reservoir. One is at Emery Bay which provides for picnicking, overnight camping, and boat launching. A campground is located at Fire Island.

Visual significance of this Unit is moderate. Some portions are visible from the Forest Service road along the reservoir or from the reservoir itself. Many people travel the east side road along the reservoir to gain access to the Bob Marshall and Great Bear Wildernesses and other areas in the South Fork drainage of the Flathead River.

## B. HISTORIC MANAGEMENT ACTIVITIES

The area has been extensively logged over the years. A number of stands have been thinned and are under intensive management. Free and commercial use of firewood has been common.

Transportation system roads have been constructed in logged areas. Future development will involve local roads only. Most of the area has been roaded.

According to past management direction, the majority of the Geographic Unit was managed to meet partial retention visual quality objectives. Modification of the visual landscape was acceptable only in the areas distant and not visible from the reservoir.

Several roads are restricted seasonally or year round to provide big-game security from human disturbance.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- Management Areas 13, 13A - As necessary to provide mule deer and elk undisturbed use of winter range and calving areas, apply motorized access restrictions from December 1 to July 1.

-- To provide security to elk utilizing summer habitat in the Firefighter Mountain area, restrict motorized access between Road 38 and 895 and Hungry Horse Reservoir from October 15 to November 30.

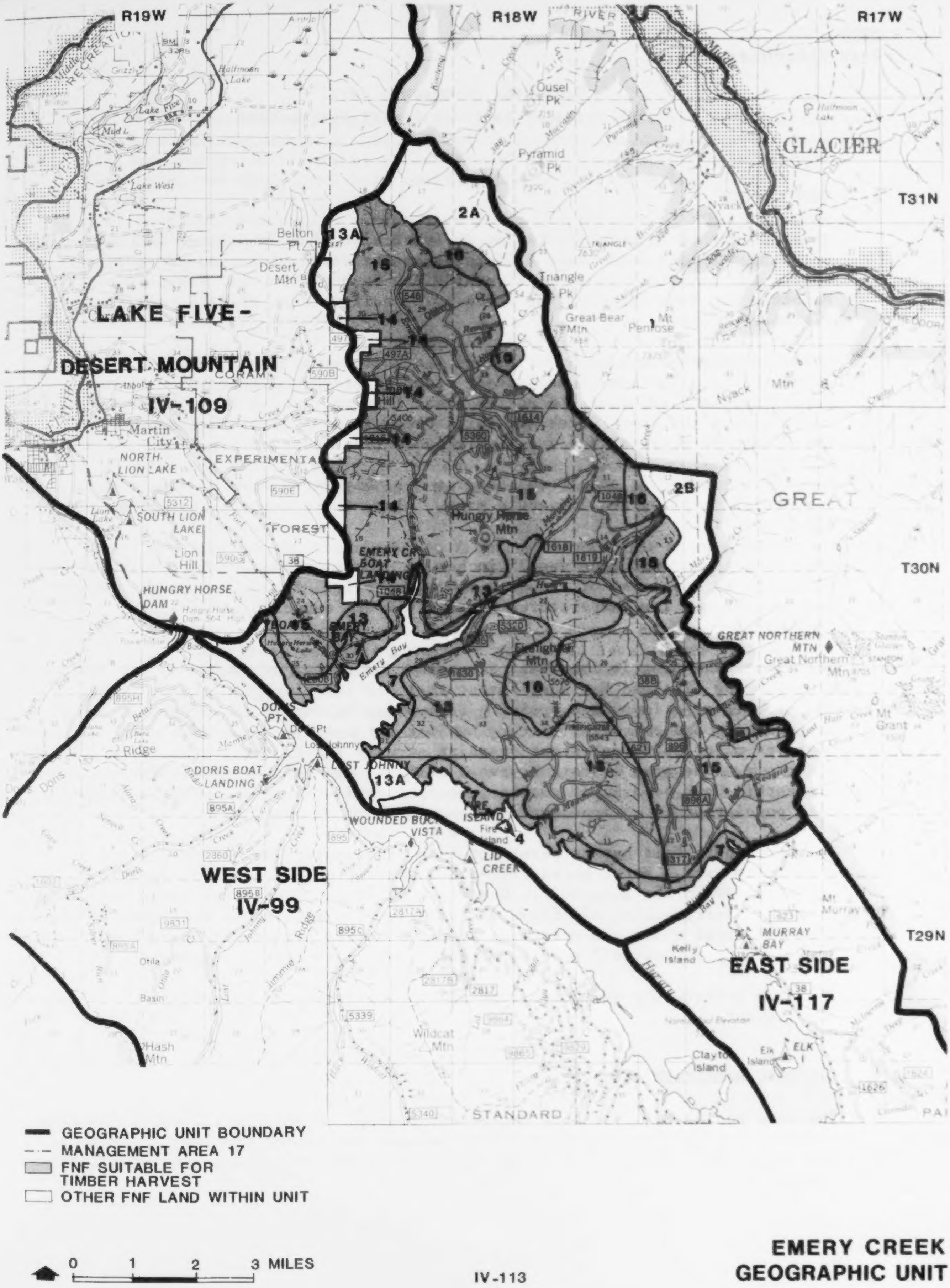
-- To protect potential bald eagle nesting trees, restrict motorized access year round between Road 38 and Hungry Horse Reservoir except on Firefighter Mountain and around the campgrounds.

-- In this Geographic Unit, apply no other motorized road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Emery Creek Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 4 | Provide developed recreation opportunities. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 13A | Provide cover and forage areas suitable for mule deer and elk winter habitat. Area not suitable for timber harvest. | Modification |
| 14 | Emphasize research to provide ecological and silvicultural information. | None Specified |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R19W
R18W
R17W
T31N
T30N
T29N
LAKE FIVE-
DESERT MOUNTAIN
IV-109
WEST SIDE
IV-99
EAST SIDE
IV-117
GLACIER
GREAT
2A
2B
13A
15
14
13
10
7
4
Hungry Horse Mtn
Firefighter Mtn
Great Bear Mtn
Mt Penrose
Triangle Pk
Ousel Pk
Pyramid Pk
Belton Pt
Desert Mtn
Martin City
NORTH LION LAKE
SOUTH LION LAKE
Lion Hill
HUNGRY HORSE DAM
EMERY CR BOAT LANDING
EMERY BAY
Emery Bay
DORIS PT
DORIS BOAT LANDING
LOST JOHNNY
WOUNDED BUCK VISTA
FIRE ISLAND
LID CREEK
GREAT NORTHERN MTN
Mt Grant
Mt Murray
MURRAY BAY
Kelly Island
Clayton Island
Elk Island
ELK
Wildcat Mtn
Hash Mtn
Otila Basin
STANDARD
CORAM
EXPERIMENTAL
FOREST
Halfmoon Lake
Lake Five
Lake West
Nyack
Nyack Mtn
0
1
2
3 MILES

GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT

**EMERY CREEK
GEOGRAPHIC UNIT**

# EAST SIDE GEOGRAPHIC UNIT

27,100 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is located on the east side of Hungry Horse Reservoir and surrounded by the Great Bear Wilderness on the east, Riverside Creek on the north, the Reservoir south of Riverside Bay on the west, and Prospector Mountain and Hoke Creek on the south. The unit is east of Kalispell in Flathead County.

There is no private land in or around the Unit except for a mining claim in Silver Basin. Terrain is moderately steep to steep. Glacial erosion and deposition have affected the entire area, leaving rounded topographic forms. Soils around the Betty Creek and Paint Creek area are derived from pre-Wisconsin material and are highly productive, compactible, and erosive.

Primary tree species are larch, Douglas-fir, Engelmann spruce, subalpine fir, western white pine, and lodgepole pine. Also, there are some ponderosa pine and grand fir.

This Geographic Unit receives 35 inches of precipitation at the reservoir and 60 inches at the crest of the Swan Range annually. Snowfall averages 200-400 inches. Winter low temperatures average 6°F and summer highs average 79°F.

The Trout Lake area is important elk summer habitat. It is one of the few areas on the Flathead National Forest that has low elevation summer range. The area is also important spring grizzly bear habitat. The reservoir area has existing and potential nesting habitat for bald eagles. This Unit contains major cutthroat trout spawning streams for fish migrating from the reservoir. The area is not, however, quite as significant as the Emery Creek Geographic Unit because of smaller, steeper gradient streams. The resident fish population is as important as the migratory population.

The Geographic Unit has no permanent local residents. Public use is relatively high. Water-based recreation activities are popular, generally oriented toward the reservoir. Camping and fishing also occur along the streams. Berrypicking and firewood gathering are popular in this unit. The east side road along the reservoir provides access for people traveling to and from the upper reservoir and Bob Marshall and Great Bear Wildernesses.

The area between the east side road and the reservoir is visually significant.

## B. HISTORIC MANAGEMENT ACTIVITIES

The area has been extensively logged and roaded. Several portions of the area have been thinned and are intensively managed for timber production. Future road development will be to access specific stands of timber, involving local roads.

Visual management has focused on the visual quality of the area along the east side road and between the road and the reservoir. In the past, this area has been managed to meet partial retention VQO's (visual quality objectives). Elsewhere, the VQO's have been modification or maximum modification.

Five developed recreation sites exist along the reservoir. These involve boat launch ramps, picnic areas, and campgrounds. There are a few trails in the middle portion of the Unit. Several roads are closed seasonally.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- To provide security to elk utilizing summer habitat in the Trout Lake area, restrict motorized access on local roads between Harris Creek and Hoke Creek from October 15 to November 30.

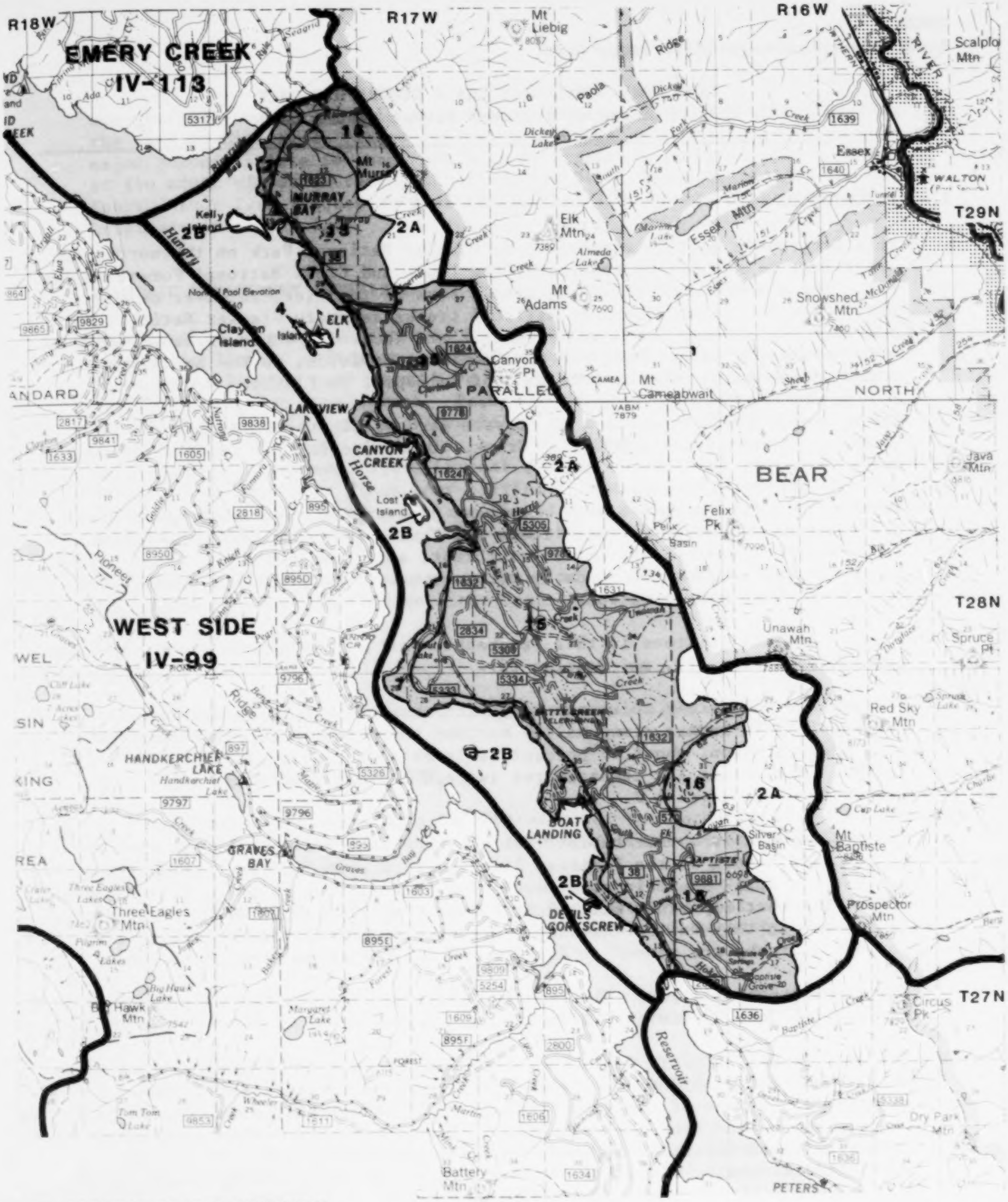
-- To protect potential bald eagle nesting trees, restrict motorized access year round between Road 38 and Hungry Horse Reservoir.

-- In this Geographic Unit, apply no other motorized road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The East Side Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 4 | Provide developed recreation opportunities. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R18W
R17W
R16W
EMERY CREEK
IV-113
Mt Liebig
Ridge
Paola
Dickey Lake
Essex
WALTON
Scalplock Mtn
RIVER
T29N
1639
1640
5317
MURRAY BAY
Mt Murray
Kelly Island
2A
2B
Hungry Horse
Elk Mtn
Almeda Lake
Essex Mtn
Mt Adams
Snowshed Mtn
Normal Pool Elevation
Clayton Island
ELK Island
Canyon Pt
Mt Cameahwait
PARALLEL
NORTH
STANDARD
LAKEVIEW
CANYON CREEK
1624
BEAR
Java Mtn
Lost Island
Felix Pk
Felix Basin
5305
1632
2834
5309
5334
5333
WEST SIDE
IV-99
T28N
Unawah Mtn
Spruce Pt
Red Sky Mtn
HANDKERCHIEF LAKE
Handkerchief Lake
BETTY CREEK
1B
BOAT LANDING
GRAVES BAY
Silver Basin
Mt Baptiste
Three Eagles Mtn
DEVILS CORKSCREW
9881
Prospector Mtn
Big Hawk Mtn
Baptiste Grove
T27N
Circus Pk
1636
Reservoir
Margaret Lake
Tom Tom Lake
Battery Mtn
Dry Park Mtn
PETERS

▬ GEOGRAPHIC UNIT BOUNDARY
-·- MANAGEMENT AREA 17
▨ FNF SUITABLE FOR TIMBER HARVEST
☐ OTHER FNF LAND WITHIN UNIT

0 1 2 3 MILES

**EAST SIDE GEOGRAPHIC UNIT**

## BEAR CREEK-CHALLENGE CABIN GEOGRAPHIC UNIT
39,700 Acres of National Forest System Land

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### A. DESCRIPTION

This Geographic Unit is surrounded by Glacier National Park on the north; the Great Bear Wilderness on the south; the Lewis and Clark National Forest on the east; and a short segment of the Middle Fork of the Flathead River on the west. The Burlington Northern Railroad tracks separate Glacier National Park and this Unit. Bear Creek and Highway 2 are located a short distance south of this boundary. Marias Pass, on the Continental Divide, is the northernmost point of the unit. The unit is east of Kalispell in Flathead County.

There is one contiguous block of private land within the Unit near the junction of Bear Creek and Giefer Creek. Otherwise Federal lands surround the Unit.

Terrain is steep to very steep. Drainage patterns in the Puzzle Creek area are not typical due to geologic folds and faults. In the Challenge Cabin area, which is east of the Lewis Overthrust, soils are unstable. Mass failure of cut and fill slopes on roads is very common. This problem is compounded because of high precipitation.

Primary species of trees in this Geographic Unit are lodgepole pine, Engelmann spruce, subalpine fir, and Douglas-fir.

The area is moderately moist and cool with average annual precipitation ranging from 38 inches along valley bottoms to 50 inches at ridgetops. Of this precipitation, about 60 percent falls as snow ranging from 300-400 inches. Wintertime low temperatures average 8°F and summertime high temperatures average 74°F.

The entire Unit is summer habitat for elk that winter in the Spruce Park area of the Middle Fork of the Flathead River. It is also important grizzly bear habitat. A small mountain goat population inhabits the Slippery Bill Mountain area. The most important bull trout spawning area in the Middle Fork drainage is located in this Unit. Challenge, Granite, Dodge, Morrison, Puzzle, and Lodgepole Creeks are closed to fishing and designated as spawning streams.

The visual sensitivity of this area is relatively low, except where Highway 2 bisects the John F. Stevens Canyon.

The Bear Creek-Challenge Cabin Geographic Unit is one of the more remote areas of Flathead National Forest. There are few year-round residents. The majority of the use of the area by hunters, fishermen, firewood cutters, and campers is derived from the east side of the Continental Divide. Firewood gathering is an important activity in the Challenge Cabin area. The two developed recreation sites (Devil Creek Campground and Fielding Picnic Area) are generally used by people from eastern Montana or people traveling through the area on Highway 2. There are two trailheads near Challenge Cabin that are major jumpoff points to the Great Bear Wilderness. There is also a trailhead at the mouth of Devil Creek that serves the Devil Creek Trail into the Great Bear. Other less frequently used trails that lead to the Great Bear also originate in this Unit.

## B. HISTORIC MANAGEMENT ACTIVITIES

Considerable logging has occurred in the Challenge Cabin area in response to insect and disease epidemics. Existing logged areas have been roaded. All necessary collector roads have been built, and only local roads would be involved in future development. Puzzle Creek Road has been closed to motorized vehicles except trail vehicles.

In the past, recommended VQO's (visual quality objectives) have been retention for the area near Bear Creek, and partial retention on the northwest side of Baldhead Mountain. These areas are viewed from Highway 2. Modification and maximum modification were acceptable for the remainder of the area.

Recently there have not been any active grazing allotments. There are special-use water transmission lines near the private land in Bear Creek.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- To provide elk secure use of habitat, close the following roads year round to motorized public access--Roads No. 5209, 9603, and 1651.

-- To provide elk security while on summer range during hunting season, restrict motorized access on all roads except Skyland Road (#569) from October 15 to November 30.

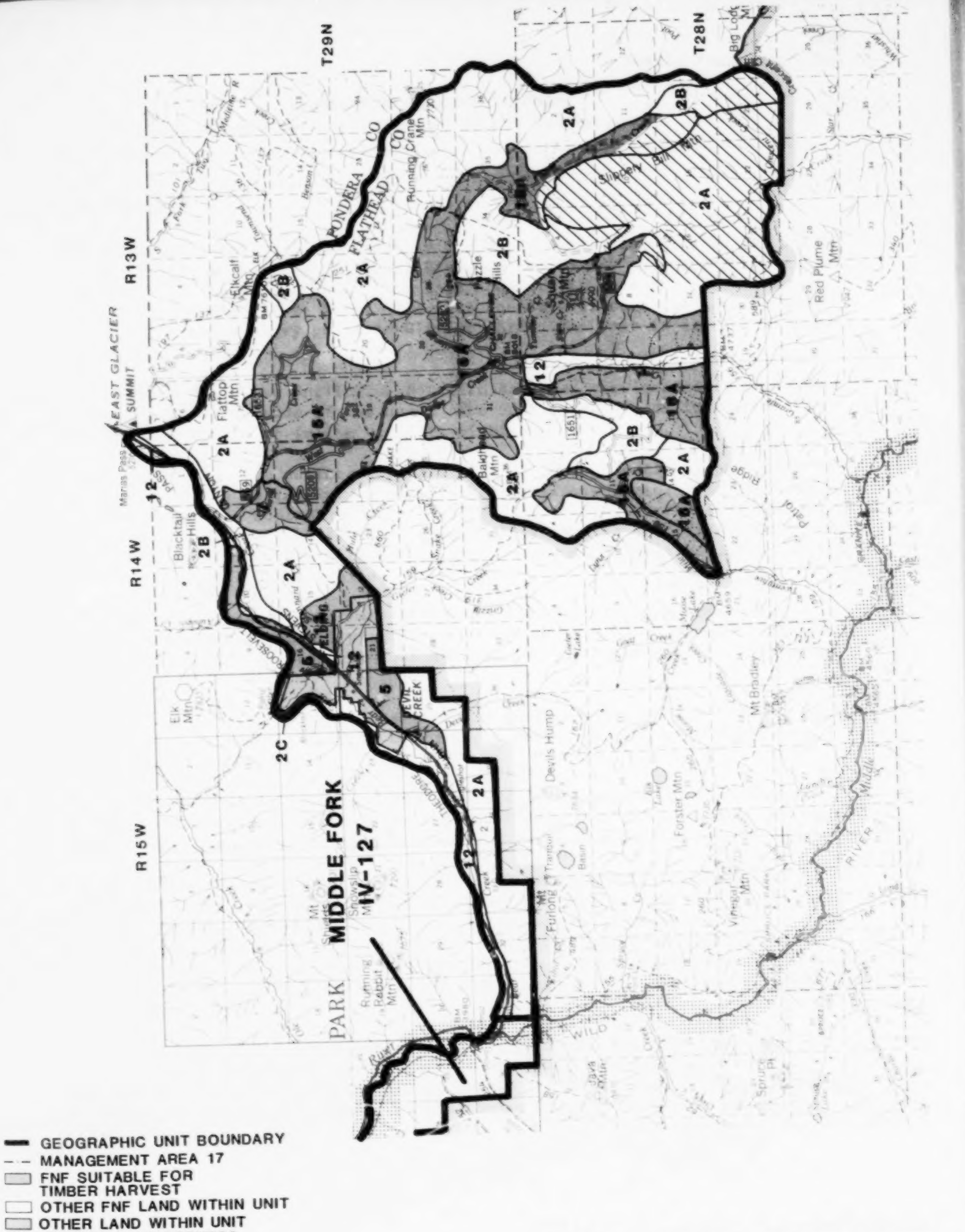
-- With the exception of winter snowmobile use, restrict motorized public access on all newly constructed local roads to provide security to grizzly bears and elk on summer and fall habitat. If conflicts develop between snowmobiles and moose using winter habitat, winter closures will be implemented.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Bear Creek-Challenge Cabin Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 5 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, are not evident. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 15A | Emphasize cost-effective timber production with roads and additional mitigation measures to protect sensitive soils. | Modification/<br>Max. Modification |
| 16A | Emphasize cost-effective timber production using roadless logging methods and additional mitigation measures to protect sensitive soils. | Modification/<br>Max. Modification |


T29N
T28N
R13W
R14W
R15W
EAST GLACIER
SUMMIT
Marias Pass
PONDERA CO
FLATHEAD CO
Running Crane Mtn
Elkcalf Mtn
Flattop Mtn
Blacktail Hills
Baldhead Mtn
Puzzle Hills
Squaw Mtn
Slippery Bill Mtn
Red Plume Mtn
Big Lodge Mtn
Patrol Ridge
Elk Mtn
Devils Hump
Forster Mtn
Mt Bradley
Vinegar Mtn
Mt Furlong
Running Rabbit Mtn
Snowslip Mtn
Mt Shields
Java Mtn
Spruce Pt
Essex
ROOSEVELT
THEODORE
PARK
MIDDLE FORK
IV-127
DEVIL CREEK
RIVER
Middle
WILD
2A
2B
2C
5
12
18A
18B
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
PROPOSED WILDERNESS
0
1
2
3 MILES

## BEAR CREEK-CHALLENGE CABIN GEOGRAPHIC UNIT

# MIDDLE FORK GEOGRAPHIC UNIT

24,400 Acres of National Forest System Land

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## A. DESCRIPTION

This Geographic Unit is surrounded by the Great Bear Wilderness on the south and the Middle Fork of the Flathead River on the north. Glacier National Park lies north of the Middle Fork. The east boundary is near the confluence of Bear Creek and the Middle Fork. The west boundary is near the town of West Glacier, the major entry point to Glacier Park. The Unit is east of Kalispell in Flathead County.

U.S. Highway 2 and the Burlington Northern Railroad are located in the canyon bottom on the north side of the unit. The only private land in the Unit is located adjacent to or in the vicinity of Highway 2.

Slopes generally face northeast toward Glacier Park. Gentle slopes exist in the bottom of the canyon but, overall, the terrain is steep. The position of the Middle Fork is controlled by a fault system running northwest-southeast at the northeast edge of the Flathead Range. Primary tree species are Engelmann spruce and subalpine fir, with a considerable amount of western larch, Douglas-fir, and lodgepole pine.

The area is moderately moist and cool and is subject to high intensity rainstorms. Average annual precipitation ranges from 38-45 inches. Snowfall is 200-400 inches. Wintertime lows average 8°F and summertime highs average 76°F.

The flood plain area is spring habitat for elk and grizzly bear. There have been persistent reports (mainly by railroad employees) of wolf sightings during the winter months.

The Middle Fork is an important fish passage for migrating bull trout and cutthroat trout. Tributary streams to the Middle Fork also sustain resident populations of cutthroat trout.

A slim ribbon of homesteads and recreational residences along Highway 2 is sandwiched between Glacier National Park and the Middle Fork and the Flathead National Forest. East of West Glacier are a few small ranches, many recreational residences, a few bars and cafes that cater to travelers and recreationists, and the homes of a few retirees and railroad workers who seem to like the isolation of the area. A time-share resort development is located near Nyack Flats.

Few people expect any additional economic growth for the area, but the population has increased, particularly the summer population due to subdivision of lands for recreational lots. In Essex, an old railroad town, the Isaac Walton Inn has become a focal point for cross-country skiing in western Montana.

This Geographic Unit is an important source of firewood for eastern Montanans and provides hunting and fishing opportunities. Recreational uses of National Forest System lands predominate. Floating of the recreational portion of the Middle Fork of the Flathead Wild and Scenic River is increasing in popularity.

Portions of this Unit are visually significant. The steep slopes are visible from Highway 2, the AMTRAK train route, and private residences that line the highway.

There has been logging in this area since the 1960's. Most of the area has been accessed by roads. Additional construction will consist of local roads only.

Some domestic livestock grazing has occurred in the flood plain areas, but no allotments have been active recently.

Visual management in the past focused on those portions of this area visible from the Middle Fork of the Flathead River and Highway 2. Lower slopes, easily visible from these areas, were assigned retention VQO's (visual quality objectives); upper slopes were assigned partial retention VQO's. The remainder of this Geographic Unit was allowed to meet modification or maximum modification VQO's.

There are several special-use permits for water transmission lines in this Geographic Unit. Water from Essex Creek is collected on private land and used by people living in the area. Several summer recreational residences have been allowed under special-use permit on National Forest System lands in the Essex drainage.

The Middle Fork of the Flathead River in this Geographic Unit is classified as a recreational portion of the Wild and Scenic River System. A short piece just below the Great Bear Wilderness boundary and above the Bear Creek junction is classified as wild. River access sites have been constructed at Moccasin Creek, Cascadilla Flats, Paola Creek, Essex, and Bear Creek.

Several trails within this Unit provide access to the Great Bear Wilderness. Several are accesses to lakes and provide good day-hike opportunities. The Bear Creek trailhead, located near the mouth of Bear Creek, serves the Big River Trail, the major access route into the Great Bear Wilderness.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

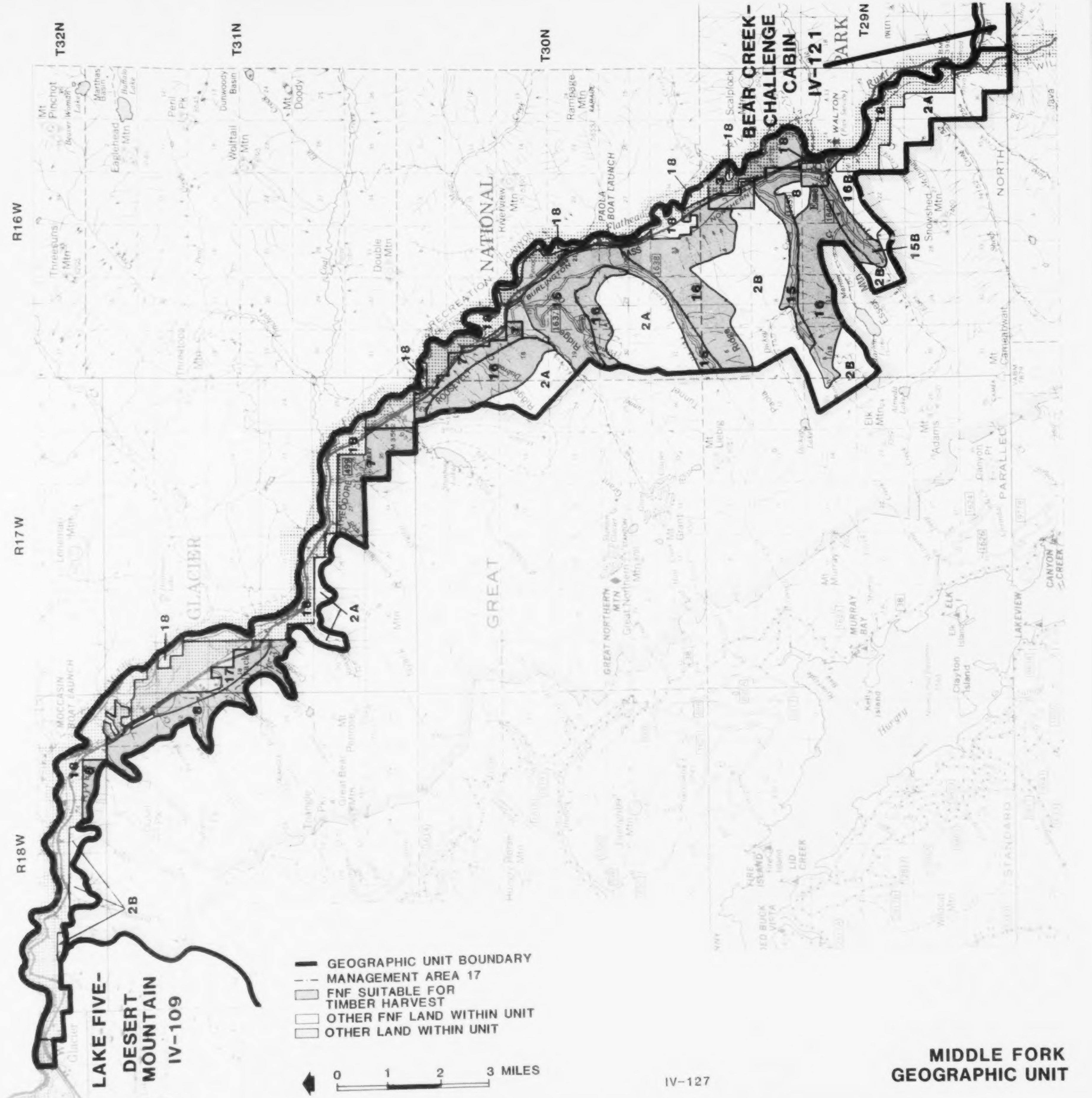
-- To provide security for elk and grizzly bears while on important spring habitat on the Middle Fork of the Flathead River floodplain, restrict motorized access year round except as needed to access designated river access sites.

-- In this Geographic Unit, apply no other motorized access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

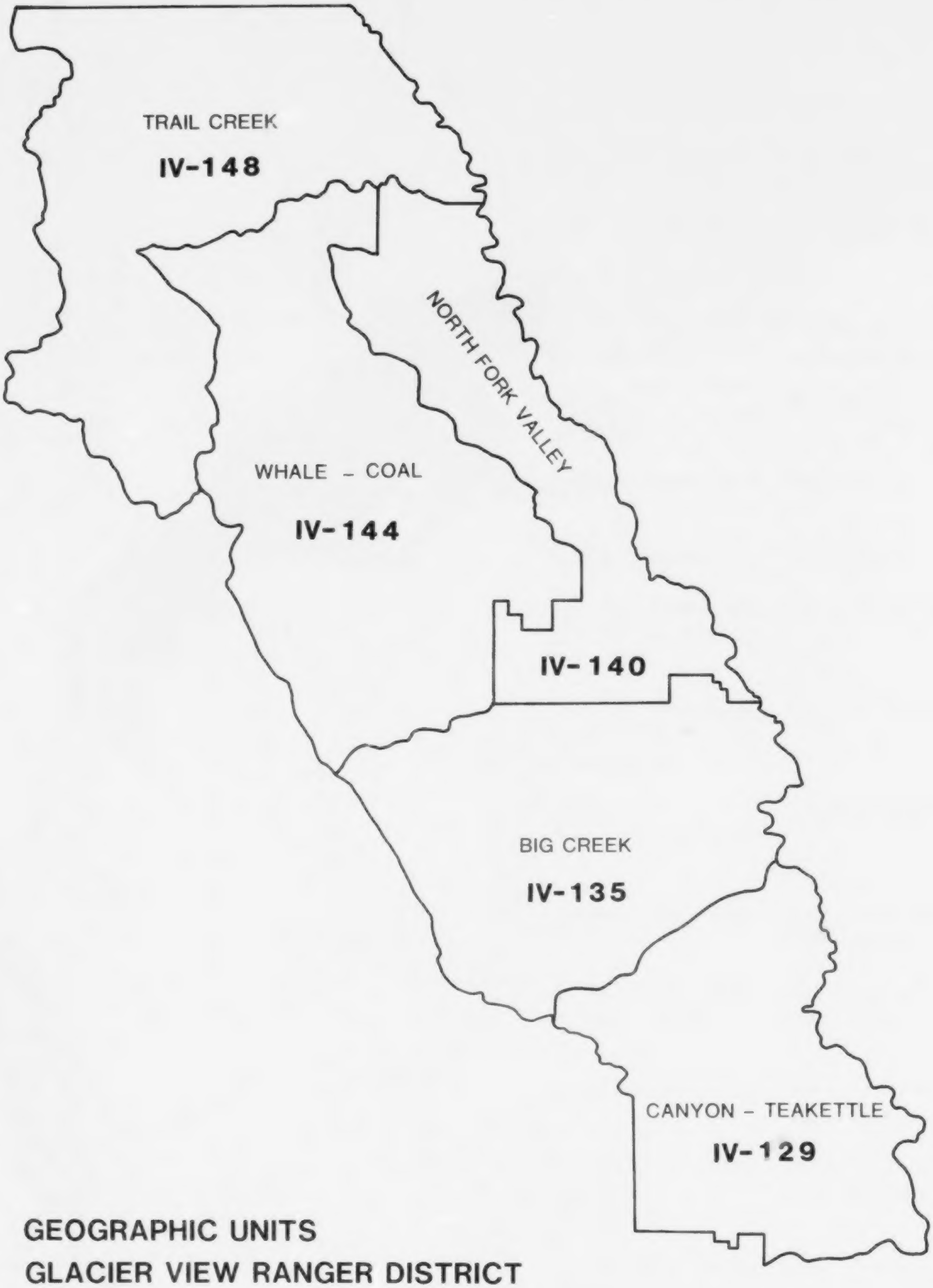
## 2. SUMMARY OF MANAGEMENT AREAS

The Middle Fork Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 8 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management without roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 15B | Emphasize cost-effective timber production with roads and additional consideration for cross-country skiing. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |
| 16B | Emphasize cost-effective timber production using roadless logging methods and additional consideration for recreational values. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |
| 18 | Provide optimum opportunity for public use and enjoyment (Flathead Wild and Scenic River). | Partial Retention |


GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0 1 2 3 MILES
LAKE FIVE-DESERT MOUNTAIN IV-109
BEAR CREEK-CHALLENGE CABIN IV-121
R16W
R17W
R18W
T32N
T31N
T30N
T29N
GLACIER
NATIONAL
PARK
GREAT
NORTHERN
RECREATION
MOCCASIN BOAT LAUNCH
PAOLA BOAT LAUNCH
WALTON
2A
2B
8
15
15B
16
16B
17
18

## MIDDLE FORK GEOGRAPHIC UNIT


TRAIL CREEK
IV-148
NORTH FORK VALLEY
WHALE - COAL
IV-144
IV-140
BIG CREEK
IV-135
CANYON - TEAKETTLE
IV-129

GEOGRAPHIC UNITS
GLACIER VIEW RANGER DISTRICT

# CANYON-TEAKETTLE GEOGRAPHIC UNIT

38,600 Acres of National Forest System Land

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## A. DESCRIPTION

The Canyon-Teakettle Geographic Unit is the southern most Geographic Unit on the Glacier View Ranger District. This Unit is bordered on the east by Glacier National Park, Hungry Horse Ranger District, and the North and Middle Forks of the Flathead River. The Flathead River and U.S. Highway No. 2 form the south boundary; private land and Tally Lake District are west of the unit; and the Smokey Range Divide is to the north. Kalispell ,lies 25 miles southwest of this Unit. The Unit is in Flathead County.

Canyon Creek is the major watershed draining south and east into the North Fork of the Flathead River. Other small streams in the southeastern portions drain into the North and Middle Forks of the Flathead River. The western portion drains south and west into Trumbull Creek.

The topography of the northern portion of this Unit is steep, with narrow, alpine glaciated, U-shaped canyons extending south and east to the Flathead River. The southern portion is less steep and rugged. The landforms are more rounded. Teakettle Mountain is a dominant feature.

The primary tree species in the northern part of the Geographic Unit are western larch, western white pine, and Engelmann spruce with subalpine fir, lodgepole pine, and Douglas-fir also present. In the southern portion of the Unit, lodgepole pine is abundant, reflecting the influence of the 1929 burn. Timber productivity is high.

Average annual precipitation is 25-60 inches. Corresponding snowfall is 150-400 inches. Average low temperatures in winter are 10°F. Average high temperatures in summer are 80°F.

During the winter, moose congregate in the southern part of this Unit. Mule deer and elk utilize winter range forage on the west face of Teakettle Mountain and the south face of Cedar Ridge. Grizzly bears use the high elevation huckleberry patches for fall feeding areas prior to denning. Most streams contain resident cutthroat trout. Migratory fish are blocked from moving upstream by a waterfall located near the mouth of Canyon Creek. The North and Middle Forks of the Flathead River (on the east boundary of the Unit) are a migratory route for cutthroat and bull trout moving from Flathead Lake upstream to the spawning areas.

ARCO Aluminum Company owns approximately 2,500 acres of land adjacent to National Forest System land northeast of Columbia Falls. The State of Montana has two blocks of land within this Unit. The southern portion is interspersed with other private ownership.

This Geographic Unit is influenced by the town and outlying residential areas of Columbia Falls. Much of the valley's growing population has settled in the Columbia Falls area. The town itself evidences the most dramatic growth of any of the three cities in the Flathead Valley. From 1970 to 1980, Columbia Falls saw a population increase of 17 percent, taking it to 3,103 residents.

Columbia Falls has an economic base dominated by manufacturing industries. The ARCO Aluminum Company plant in Columbia Falls, the largest single employer in the valley, generally employs almost 1,200 people. Several of the large sawmills in the valley are also located in Columbia Falls.

Outdoor recreation activities, particularly hunting and fishing, involve most residents. The Canyon-Teakettle Geographic Unit, as well as the remainder of the Glacier View Ranger District, is an important source of recreation opportunities for Columbia Falls residents as well as residents of the Flathead Valley.

The visual significance of the area is high because much of the Unit is viewed by residents of Columbia Falls, recreationists on the river, and travelers on Highways 2 and 40.

## B. HISTORIC MANAGEMENT ACTIVITIES

In response to severe windthrow problems in the 1950's and more recent insect and disease problems of the 1960's and 1970's, timber harvest has been concentrated in the drainage bottoms. Nearly all the major drainages have been roaded. Access into the Unit is from all sides.

Wildlife management has been complicated by the heavy recreational use of the area and the intermingled private lands, many of which have been subdivided. Several roads have been closed seasonally to provide wildlife security from human disturbance. The winter range on Cedar Ridge has been managed as such.

The North Fork of the Flathead Wild and Scenic River system is classified as "Recreational" south to its confluence with the South Fork of the Flathead River. One river access site has been developed. There are few trails in this area.

Cedar Creek is used by the town of Columbia Falls as a municipal water supply. The road into the city reservoir has been closed to protect the dam and water quality.

Visual management in the past has allowed modification or maximum modification of the visual landscape through much of the Unit. Partial retention VQO's (visual quality objectives) have been applied only to the area visible from where the Middle Fork joins the North Fork.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- Management Area 13 - Except on Cedar Ridge Road No. 1690, apply motorized road access restrictions from December 1 to May 15 to provide mule deer and elk undisturbed use of winter range.

-- If necessary to provide moose undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15 within the area bounded on the east by the North Fork Road, the north by the Canyon Creek Road and the west by Trumble Creek Road. Restrict winter motorized off-road use also if it attracts large crowds on a continuing basis.

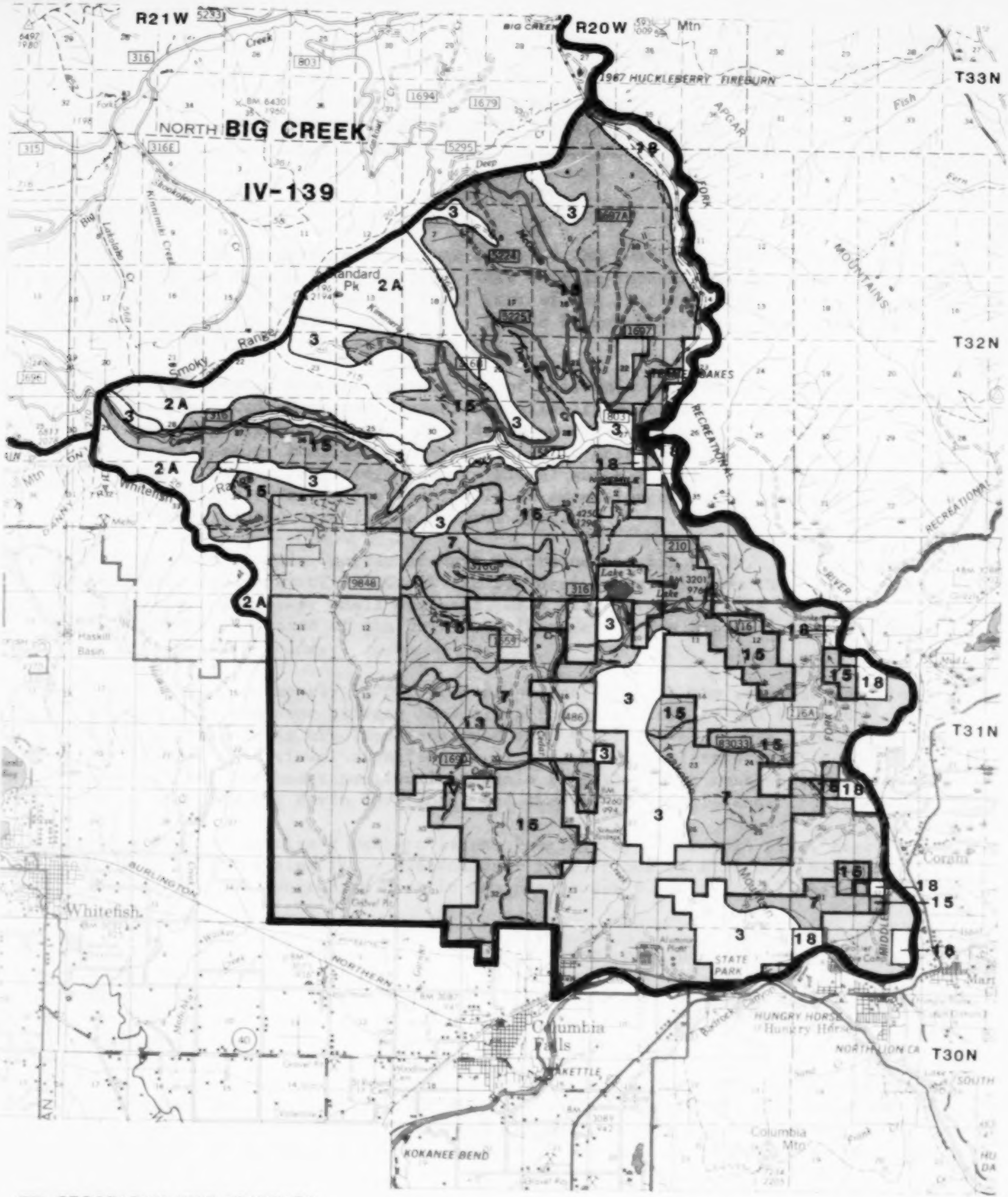
-- Apply motorized access restrictions from April 1 to November 30 to the local roads, but not collector or arterial roads, above 5,400-feet in elevation to provide security for grizzly bears using these travel corridors.

-- In this Geographic Unit, apply no other motorized road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 2. SUMMARY OF MANAGEMENT AREAS

The Canyon-Teakettle Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |
| 18 | Provide optimum opportunity for public use and enjoyment (Flathead Wild and Scenic River). | Partial Retention |
| 20 | Manage as a winter sports area under the Big Mountain Ski Area Master Plan | Modification |


R21W
R20W
T33N
T32N
T31N
T30N
1967 HUCKLEBERRY FIREBURN
NORTH BIG CREEK
IV-139
APGAR
MOUNTAINS
FORK
RECREATIONAL
RIVER
Standard Pk
Smoky Range
Whitefish Range
Haskill Basin
Whitefish
BURLINGTON
NORTHERN
Columbia Falls
TEAKETTLE
KOKANEE BEND
Columbia Mtn
HUNGRY HORSE
Hungry Horse
NORTH LION CR
STATE PARK
Coram
2A
3
7
13
15
18

▬ GEOGRAPHIC UNIT BOUNDARY
-·- MANAGEMENT AREA 17
▨ FNF SUITABLE FOR TIMBER HARVEST
☐ OTHER FNF LAND WITHIN UNIT
▨ OTHER LAND WITHIN UNIT

0 1 2 3 MILES

## CANYON- TEAKETTLE GEOGRAPHIC UNIT

# BIG CREEK GEOGRAPHIC UNIT
68,000 Acres of National Forest System Land

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## A. DESCRIPTION

The Big Creek Geographic Unit lies south of the Coal Creek State Forest and north of the Smokey Range Divide. This Unit is bordered on the east by Glacier National Park and the North Fork of the Flathead River and on the west by the Whitefish Divide and the Tally Lake Ranger District. This Unit lies north of Kalispell in Flathead County.

The topography of the western portion of this Unit consists of steep, narrow, alpine glaciated, U-shaped canyons funneling from the north, west, and south into the Big Creek drainage. This drainage extends eastward, emptying into the North Fork of the Flathead River which in this area is also a narrow, glaciated, 4-mile long ridge (Demers Ridge) which parallels the North Fork Flathead River. This ridge was likely an extension of Apgar Mountain. Demers Ridge is dissected very little by drainages.

The majority of this Geographic Unit is drained by Big Creek. The side and headwater drainages of Big Creek fan out draining areas from the north, west, and south. One other small drainage, Dead Horse Creek, drains the north-central portion of the Unit, and there are a few alpine lakes scattered across the north side.

There are approximately 1,700 acres of private land in the southwest portion of this Unit and some private land along the North Fork of the Flathead River. These lands are less developed than those further north, around Polebridge. The visual significance of the majority of this area is low; however, the northeast portion is visible from the North Fork of the Flathead River and from the North Fork Road, and the visual significance is high.

Mixed conifer species - western larch, Douglas-fir, lodgepole pine, Engelmann spruce, and subalpine fir - are dominant in portions of this Unit below 6,000 feet elevation. Whitebark pine is dominant above 6,000 feet. Timber productivity is high.

The area is relatively moist with average annual precipitation ranging from 25 inches at the mouth of Big Creek to 62 inches at the top of the Whitefish Range. Snowfall at low elevations is 150 inches yearly and at high elevations, 400 inches yearly. Low temperatures average 8°F in winter. High temperatures average 80°F in summer.

This Unit has most of the big-game winter habitat on the Glacier View Ranger District. The Demers Ridge area provides winter habitat for mule deer and elk, and whitetailed deer winter near the mouth of Big Creek. Important year-round moose habitat is also provided. The Unit is also an important travel route for grizzly bears traveling to and from Glacier National Park along the Smokey Range Divide. Some of these bears den in this Unit. Big Creek and its tributaries are closed to fishing. It is a bull trout and cutthroat trout spawning stream. The North Fork Flathead River is a migratory route for cutthroat and bull trout moving from Flathead Lake upstream to the spawning areas.

Recreation use of the Big Creek drainage is moderate to high. The area is relatively accessible from the Flathead Valley. Roads provide access to most areas withing this Unit. Primary recreation activities include hunting, berrypicking, snowmobiling, and driving for pleasure. This area is also popular for firewood gathering.

## B. HISTORIC MANAGEMENT ACTIVITIES

Most timber harvest has occurred as a result of insect and disease problems. Timber harvest following these natural catastrophes was in the creek bottoms where the affected species occurred. Reacting to these catastrophes has not allowed for much of a planned timber management program.

All the major drainages have been roaded. The transportation network in the Big Creek Geographic Unit is extensive. The North Fork Road traverses the eastern edge of the Unit. Several roads have been seasonally affected by road closures used to mitigate the impacts of timber harvest on grizzly bears.

Visual management within this Geographic Unit has provided for modification or maximum modification of the majority of lands in the suitable timber base. In the northeast portion of the Unit along the North Fork Road, the VQO's (visual quality objectives) have been retention.

Recreation management has been oriented toward the North Fork of the Flathead Wild and Scenic River, the Big Creek Campground, and trails accessing scenic vistas on the Unit. The North Fork, in this Unit, has been designated "Scenic" north of the Camas Bridge, and "Recreational" south of the Camas Bridge. One river access site has been developed. The Whitefish Divide - Smokey Range National Recreation Trail runs along the western boundary of this Unit. The Big Creek Campground and picnic ground near the Camas Creek entrance to Glacier National Park receives heavy use.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- Management Areas 13, 13A - Where necessary to provide mule deer and elk undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15.

-- Management Area 9 - To provide whitetailed deer undisturbed use of winter range, apply motorized access restrictions from December 1 to May 15 except where roads are needed to access private land (i.e., the North Fork Road).

-- Apply motorized access restrictions from April 1 to November 30 to the local roads, but not collector or arterial roads, above 5,400 feet in elevation, including those located on Smokey Range, Dead Horse, Winona, Demers, and the Whitefish Range Divide; to provide security for grizzly bears using these travel corridors.

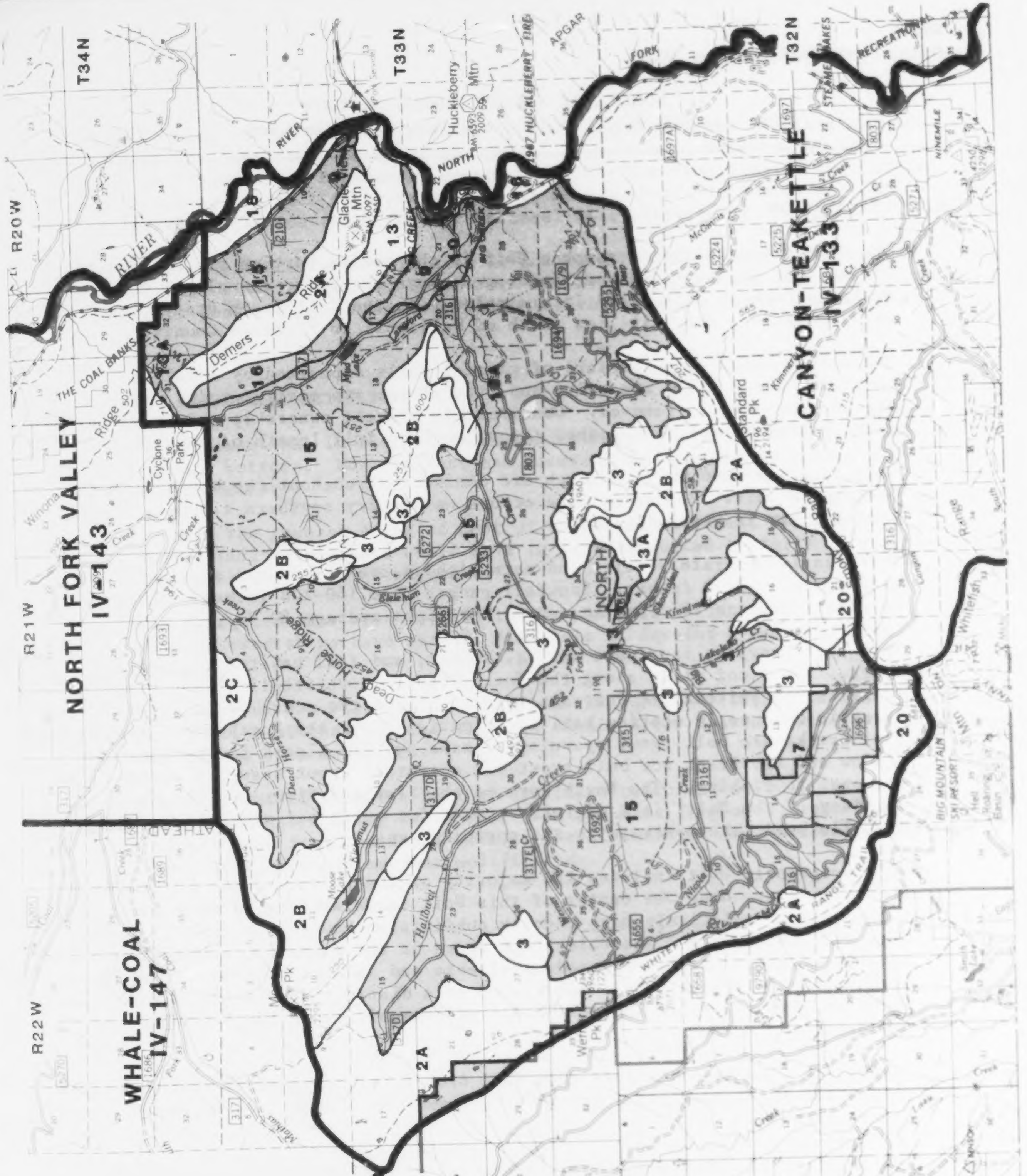
-- In this Geographic Unit, apply no other motorized road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

### 2. SUMMARY OF MANAGEMENT AREAS

The Big Creek Geographic Unit contains portions of Forest-wide management areas. The management direction for these areas is provided in Chapter III. The tabulation on the following page, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

GVRD
Big Creek Geog. Unit

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 2C | Provide for a variety of roaded natural-appearing recreation opportunities. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 4 | Provide developed recreation opportunities. | Retention |
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management without roads, do not dominate. | Partial Retention |
| 9 | Provide cover and forage areas suitable for whitetailed deer winter habitat. | Partial Retention |
| 10 | Administrative site. | None Specified |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 13 | Provide cover and forage areas suitable for mule deer and elk winter habitat. | Modification |
| 13A | Provide cover and forage areas suitable for mule deer and elk winter habitat. Area is not suitable for timber harvest. | Modification |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |
| 18 | Provide optimum opportunity for public use and enjoyment (Flathead Wild and Scenic River). | Partial Retention |
| 20 | Manage as a winter sports area under the Big Mountain Ski Area Master Plan. | Modification |


NORTH FORK VALLEY
IV-143
CANYON-TEAKETTLE
IV-133
WHALE-COAL
IV-147
T34N
T33N
T32N
R20W
R21W
R22W
Huckleberry Mtn
Glacier View Mtn
Demers Ridge
Horse Ridge
Standard Pk
Cyclone Park
Winona Ridge
THE COAL BANKS
APGAR
NORTH FORK
RIVER
BIG MOUNTAIN SKI RESORT
Werner Pk
Whitefish
2A
2B
2C
3
7
10
13
13A
15
16
18
20
316
317
803
1692
1693
1694
1696
1697
5224
5225
5231
5266
5272
5273

GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## BIG CREEK GEOGRAPHIC UNIT

## NORTH FORK VALLEY GEOGRAPHIC UNIT

21,400 Acres of National Forest System Land

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## A. DESCRIPTION

The North Fork Valley Geographic Unit is the center portion of the North Fork Valley. It includes the benchland area above the river and all of the National Forest System land intermingled with the Coal Creek State Forest and private lands. The Unit lies north of Kalispell in Flathead County.

The valley bench area consists of glacial tills deposited by a valley glacier. These tills are silty and, therefore, are easily eroded when vegetative cover is removed. Considerable private ownership exists along the river bottoms and lower benches throughout the full length of this Unit.

Lodgepole pine and western larch are dominant throughout the benches of this Geographic Unit. Ponderosa pine occurs on the dry southern slopes. Timber productivity is generally high.

The area is moderately moist and warm with an average annual precipitation ranging from 25-40 inches. Snowfall ranges from 150-200 inches. Temperatures in winter average $10^{O}$F and in summer the highs average $80^{O}$F.

This Unit provides important spring, summer, and fall habitat for grizzly bears. The flood plain along the North Fork is a whitetailed deer winter range area. Whitetailed deer also winter around the mouth of Coal Creek. There is bald eagle nesting habitat potential along the North Fork. Whale and Coal Creeks are bull trout spawning streams and are closed to fishing. Red Meadow and Hay Creek are bull trout and cutthroat trout spawning streams and are open to fishing. The North Fork of the Flathead River (on the east boundary of the Unit) is a migratory route for cutthroat and bull trout moving from Flathead Lake upstream to the spawning areas.

This Geographic Unit includes the majority of the private lands in the North Fork drainage. Near the center of this Unit is Polebridge, a settlement that includes some relatively high density subdivision housing, a resort, store, bar, and post office. The Polebridge store is the community's hub, in part because of the services and goods available and in part because it has the area's only telephone. Self-identified as a distinct population, these "North Forkers" live in one of the most isolated communities of the Forest's zone of influence.

Population figures, estimated from mail drop figures, indicate that the winter population has dramatically grown while summer residents have increased at a slower rate.

The majority of the private land in the valley bottom has been subdivided. Some large tracts still exist, with plans for future subdivision. Landowners number about 350; 250 own property within the Wild and Scenic River corridor.

Although much of the land has been split into parcels, sales and development activity has been slow. Many of the tracts seem to have been bought for investment purposes. Population growth generally has been limited to seasonal occupation by the lack of opportunities to make a living in the area. The growing season is too short for agricultural self-sufficiency.

The visual significance of this area is moderate to high. Some portions of the Unit are visible from the North Fork of the Flathead River and/or from the North Fork Road. Many of the recreation activities are oriented toward the river.

## B. HISTORIC MANAGEMENT ACTIVITIES

Timber management has in the past been concentrated on the lower slopes and in the drainage bottoms. Most harvest has occurred in response to insect and disease epidemics.

Roads access the general areas of most of the National Forest System lands in this Unit. Additional roads would have to be constructed to fully access the area for intensive timber management.

Wildlife management has been complicated by the private lands in the Unit. Intermingled ownerships have made it difficult to develop a comprehensive management plan.

The North Fork of the Flathead River within this Unit is classified as a "Scenic" portion of the Flathead Wild and Scenic River System. One river access site has been developed.

Visual management of the area has not specified restrictive VQO's (visual quality objectives) for any area other than the east face of Cyclone Peak which can be seen from the North Fork of the Flathead River. Elsewhere VQO's could be modification or maximum modification.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF ROAD MANAGEMENT

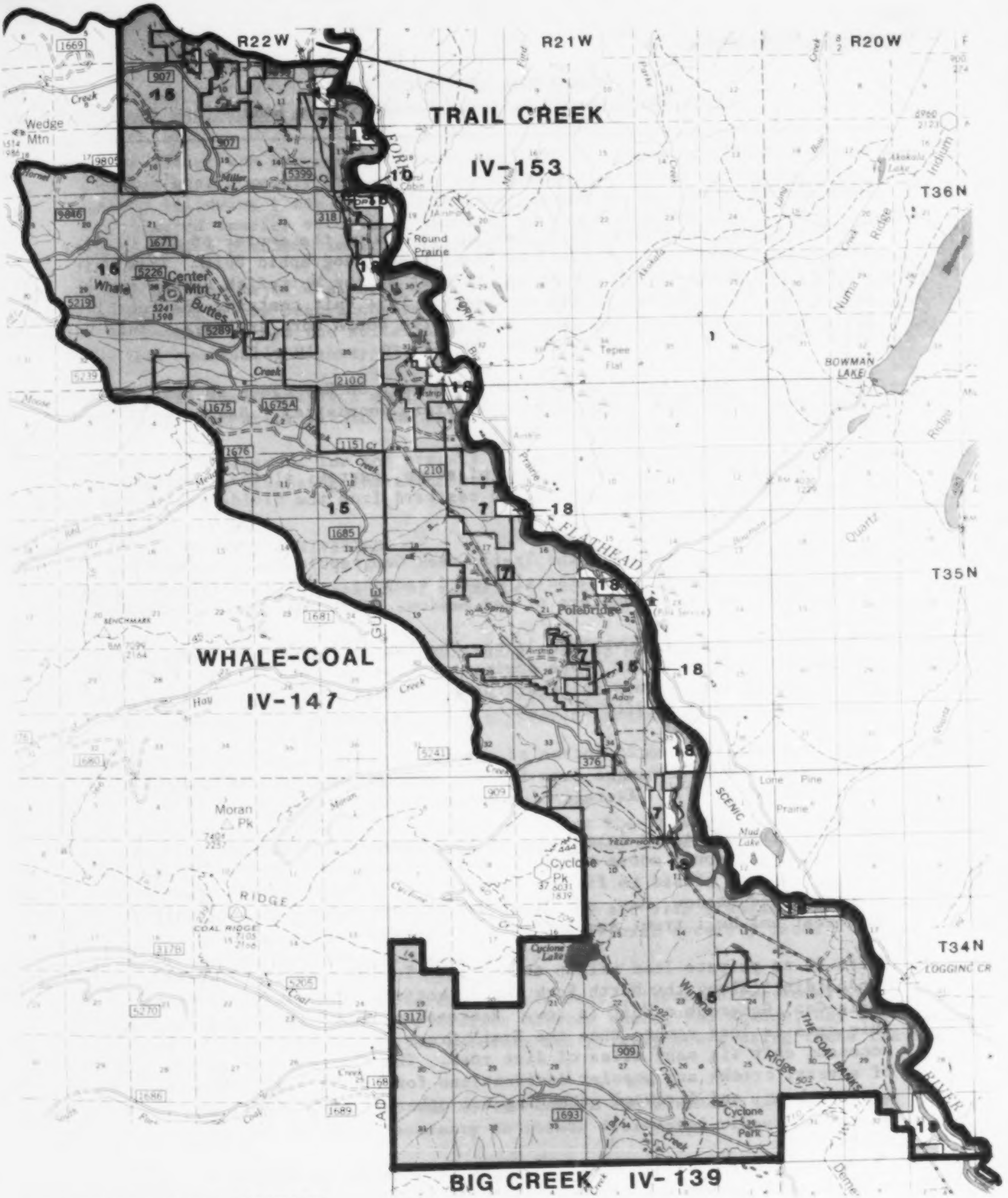
Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

- Motorized access to the North Fork of the Flathead River will be limited to designated river access sites.
- In this Geographic Unit, apply no other motorized road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

### 2. SUMMARY OF MANAGEMENT AREAS

The North Fork Valley Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 10 | Administrative site. | None Specified |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/ Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |
| 18 | Provide optimum opportunity for public use and enjoyment (Flathead Wild and Scenic River). | Partial Retention and Retention |


R22W
R21W
R20W
TRAIL CREEK
IV-153
T36N
T35N
T34N
Wedge Mtn
Round Prairie
Center Mtn
Whale Buttes
Tepee Flat
BOWMAN LAKE
Numa Ridge
Akokala Lake
Quartz
FLATHEAD
Polebridge
Anaconda
WHALE-COAL
IV-147
Moran Pk
Cyclone Pk
COAL RIDGE
Cyclone Lake
SCENIC
Lone Pine Prairie
Mud Lake
LOGGING CR
THE COAL BANKS
Winona Ridge
Cyclone Park
RIVER
BIG CREEK IV-139
15
7
16
18

▬ GEOGRAPHIC UNIT BOUNDARY

-·- MANAGEMENT AREA 17

▨ FNF SUITABLE FOR TIMBER HARVEST

☐ OTHER FNF LAND WITHIN UNIT

▩ OTHER LAND WITHIN UNIT

0 1 2 3 MILES

## NORTH FORK VALLEY GEOGRAPHIC UNIT

## WHALE-COAL GEOGRAPHIC UNIT

93,000 Acres of National Forest System Land

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### A. DESCRIPTION

The Whale-Coal Geographic Unit lies just north of the center of the Glacier View Ranger District, south of the Trail Creek Geographic Unit. This Unit borders the Tally Lake District on the west at the Whitefish Divide and the Coal Creek State Forest on the southeast. This Unit contains the foothills and mountain ridges of the midportion of the North Fork drainage. This Unit lies north of Kalispell in Flathead County.

These ridges vary in elevation from 4,000 feet on Hay Creek to four mountain peaks over 7,300 feet along the southwestern boundaries. Nasukoin is the highest peak at 8,086 feet elevation.

The topography of this Unit is that of steep, narrow, alpine glaciated, U-shaped canyons. These canyons run eastward from the divide toward the North Fork of the Flathead River.

Whale Creek, originating in the Trail Creek Geographic Unit, as well as several other creeks, drain the glaciated canyons. There are several small alpine lakes in the headwaters of Red Meadow, Moose, and Akinkoka Creeks.

Mixed conifer species - western larch, Douglas-fir, lodgepole pine, Engelmann spruce, and subalpine fir - are dominant in the portions of this Unit below 6,000 feet in elevation. Whitebark pine is dominant in areas above 6,000 feet. Timber productivity is high.

Low elevations receive 25 inches of precipitation each year; high elevations, 72 inches. Snowfall ranges from 150-400 inches. Average low temperatures in winter are about 8°F. Average high temperatures in summer are 80°F.

This Unit encompasses a large area of good grizzly bear habitat. It is also important year-round moose habitat. Whale Creek, Coal Creek, and all their tributaries are closed to fishing because they are bull trout spawning streams. Red Meadow, Hay, and Moose Creeks have migratory and resident cutthroat and bull trout and are open to fishing.

There is no private land within this Unit. To the east are private landholdings along the North Fork Valley bottom. Visual significance of the Whale-Coal Geographic Unit is low. Recreation use of the area is moderate. This area is less remote than the Trail Creek Geographic Unit but is still accessed only via many miles of dirt road. The alpine lakes at the headwaters of several creeks are popular destinations for hikers and fishermen. Hunting, berrypicking, and firewood gathering are other significant uses.

## B. HISTORIC MANAGEMENT ACTIVITIES

Little timber was harvested prior to the 1950's. Since that time, harvest has occurred most commonly in response to windthrow or insect epidemics. The harvest following these natural catastrophes was in the creek bottoms where the affected species occurred. Reacting to these catastrophes has not allowed for much of a planned timber management program.

Nearly all the major drainages were roaded by the early 1970's. Each of the main drainages has been accessed by one or two roads. The road in Red Meadow Creek extends across the Whitefish Divide, connecting with the Swift Creek Road and eventually Highway 93.

Visual management has been modification or maximum modification visual quality objectives for areas within the suitable timberland.

Recreation management for the area is limited and focuses on the alpine lakes and few trails accessing these and other scenic areas.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF THREATENED AND ENDANGERED SPECIES MANAGEMENT

A portion of this Unit will be included in the Trail Creek Grizzly Bear Management Area. Management of this area is discussed under the Trail Creek Geographic Unit.

### 2. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project analysis.

-- Apply year-round motorized access restrictions to the local roads above 5,400 feet in elevation between Whale, Red Meadow, Hay and Coal Creeks to provide security for grizzly bears using these travel corridors.

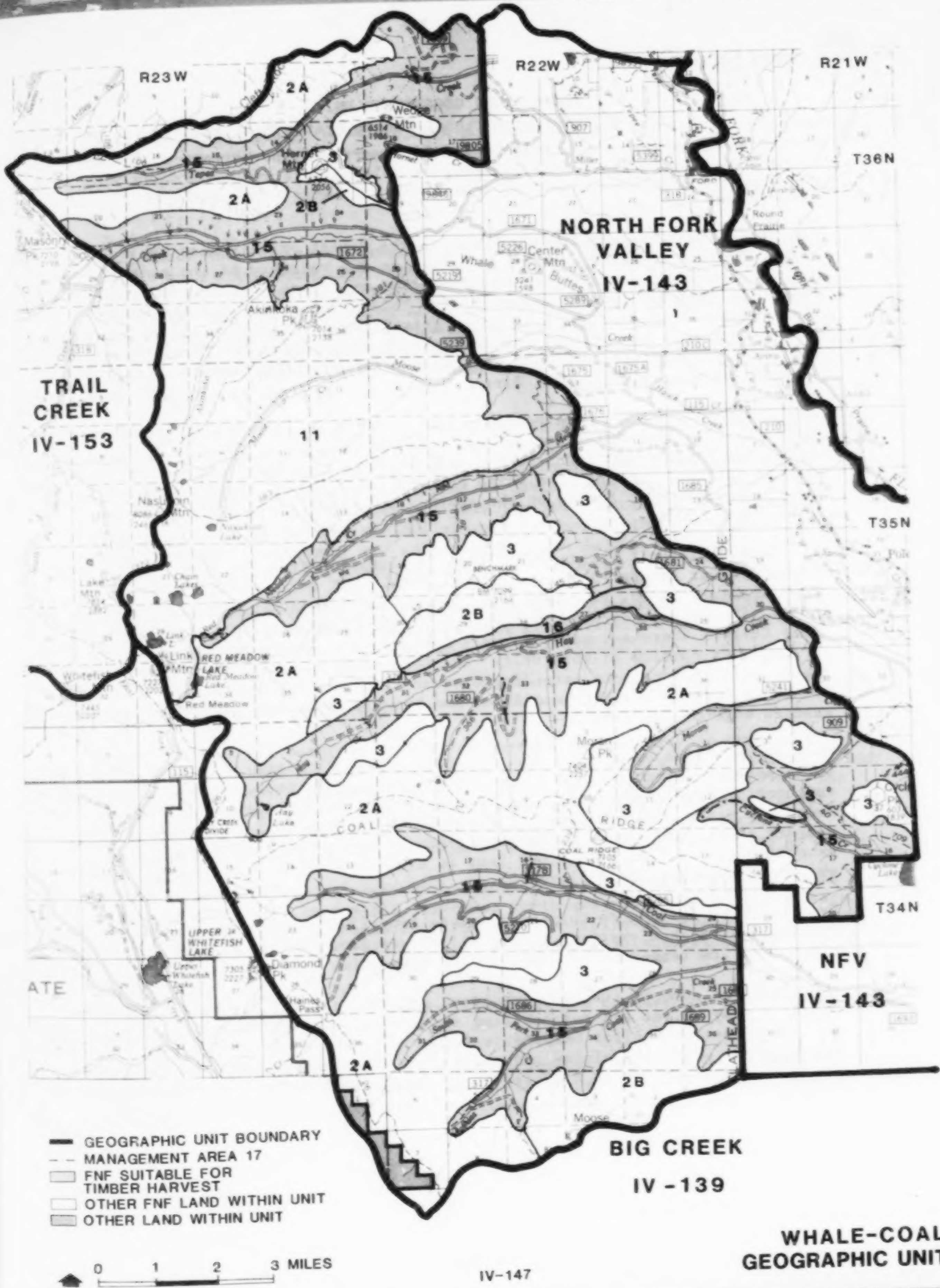
-- Motorized access to the North Fork of the Flathead River will be limited to roads necessary to access designated river access sites.

-- In this Geographic Unit, apply no other motorized road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources and public safety.

## 3. SUMMARY OF MANAGEMENT AREAS

The Whale-Coal Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area:

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 2A | Provide for a variety of semiprimitive nonmotorized recreation opportunities. | Retention |
| 2B | Provide for a variety of semiprimitive motorized recreation opportunities. | Retention |
| 3 | Manage to maintain or enhance amenity values. | Retention |
| 11 | Maintain or enhance grizzly bear habitat. | Modification |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 15 | Emphasize cost-effective timber production with roads. | Modification/<br>Max. Modification |
| 16 | Emphasize cost-effective timber production using roadless logging methods. | Modification/<br>Max. Modification |
| 17 | Protect and maintain riparian zone habitat while maintaining a sustained yield of timber harvest. | None Specified |


R23W
R22W
R21W
T36N
T35N
T34N
NORTH FORK VALLEY
IV-143
TRAIL CREEK
IV-153
NFV
IV-143
BIG CREEK
IV-139
Wedge Mtn
Hornet Mtn
Center Mtn
Whale Buttes
Akinkoka Pk
Nasukoin Mtn
Lake Mtn
Link Mtn
RED MEADOW LAKE
Red Meadow
Moran Pk
COAL RIDGE
UPPER WHITEFISH LAKE
Diamond Pk
Hanes Pass
Round Prairie
Moose
Whale Creek
Moose Cr
Hay Creek
Coal Cr
Cyclone
1
2A
2B
3
11
15
16
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0
1
2
3 MILES

## WHALE-COAL GEOGRAPHIC UNIT

## TRAIL CREEK GEOGRAPHIC UNIT

64,640 Acres of National Forest System Land

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## A. DESCRIPTION

The Trail Creek Geographic Unit contains the finest grizzly bear habitat in the lower 48 States and is very important to the recovery of the grizzly bear from a threatened status. Grizzly densities up to one bear per square mile have been reported by some authorities. This is several times the known grizzly densities in other well known grizzly habitats. In order to preserve and enhance this key grizzly habitat, all of this geographic unit, except the Wild and Scenic River corridor, will be classified and managed as the Trail Creek Grizzly Bear Management Area.

This Geographic Unit is the northern most portion of the Glacier View Ranger District. The boundaries are formed by British Columbia, Canada, on the north; the Kootenai National Forest and the Whitefish Divide on the west; Glacier National Park and the North Fork of the Flathead River on the east; and the Teepee Creek Divide on the south. This Unit lies north of Kalispell in Flathead County.

This Geographic Unit varies 4,000 feet in elevation from the North Fork of the Flathead River to the 13 mountain peaks within and surrounding the Unit. Mount Thompson Seton, Lake Mountain, and Nasukoin Mountain are the highest peaks. The Unit is drained primarily by Trail Creek and the upper reaches of Whale Creek. There are several small lakes in the southwestern and northwestern portion of this Unit. The topography includes steep, narrow, alpine glaciated canyons extending eastward from the Whitefish Divide toward the North Fork of the Flathead River and heavily timbered foothills along the eastern edge of the area.

Most of this area burned in the 1910, 1917, and 1929 fires. Portions of these burns provide extremely high productivity for grizzly bear habitat components. The predominant tree species in the burned-over areas is lodgepole pine. The remainder of the Unit is a mixture of lodgepole pine, western larch, Douglas-fir, Engelmann spruce, and subalpine fir with the exception of the area over 6,000 feet in elevation which is almost exclusively whitebark pine and alpine larch.

Precipitation falling on this area ranges from 25 inches in low elevations to 80 inches at high elevations. Snowfall ranges from 150-400 inches. In wintertime low temperatures average 4°F; summertime highs average 80°F.

This Unit has some of the most important grizzly bear habitat on the Flathead Forest. Gray wolves are reinhabiting the area as part of their home range. All the necessary habitat components for grizzly bears and gray wolves are represented. The high alpine areas and spruce basins are ideal summer range for grizzlies. The steep timbered north facing slopes provide good denning habitat.

The flood plains along the North Fork and the numerous marshes and bogs in the foothills provide ideal spring/fall range. The vast roadless areas provide good security. The area is also suitable as elk summer range, and there is good potential eagle nesting habitat near the North Fork of the Flathead River.

Trail Creek and all its tributaries are closed to fishing up to Thoma Creek to protect bull trout spawning. The upper end of Trail Creek has a resident cutthroat fishery and is open to fishing. Whale Creek, a bull trout spawning stream, and all its tributaries are also closed to fishing up to the Whale Creek falls. Shorty Creek, a tributary to Whale Creek below the falls, also has resident cutthroat and bull trout fishery. The North Fork of the Flathead River is a migratory route for cutthroat and bull trout moving from Flathead Lake upstream to the spawning areas.

There is some private land at the lower end of Trail Creek and along the North Fork on the valley benches. Historically, most of the owners of these lands resided in the area only during the summer. Recent subdivision of larger tracts has attracted people interested in living year round in this remote area. Employment opportunities are very limited. Access is via 40 miles of unpaved road that receives minimal snowplowing during the winter months. Thus, although both summer and winter population in the area has increased, winter residents are far fewer than summer residents.

Recreational use of the area is low because of its remoteness. The unroaded nature of the area, however, attracts some recreationists interested in nonwilderness backcountry hiking and horseback riding.

## B. HISTORIC MANAGEMENT ACTIVITIES

Timber harvest has occurred mostly in response to windthrow in the early 1950's, spruce bark beetle infestation in the late 1950's and late 1960's, and mountain pine beetle infestations in the late 1970's and early 1980's. The harvest following these natural catastrophes was located partially in the creek bottoms where the affected trees occurred. Reacting to these catastrophes has not allowed for much of a planned timber management program.

Nearly all the major drainages were roaded by the early 1970's. The North Fork is an arterial road which traverses north and south across the eastern edge of the Unit in the North Fork Valley. Several other roads are located in valley bottoms. Much of this unit, in the higher elevations, has not been roaded.

Scenic significance of the area is relatively low because few people utilize the area.

Visual management has historically been oriented toward the North Fork of the Wild and Scenic River. The remainder of this area has been managed to meet modification or maximum modification visual quality objectives.

Recreation management has also focused on the river. This upper portion of the North Fork of the Flathead Wild and Scenic River System is designated as "Scenic." One river access site is located at the U.S./Canada border. In addition, a small developed campground called Tuchuck is located in Trail Creek. Several trails are located in this area, accessing the mountain peaks. Only recently have these received scheduled maintenance.

## C. FUTURE MANAGEMENT ACTIVITIES

The proposed 10-year schedule of management activities is presented by resource in Appendix M.

### 1. SUMMARY OF THREATENED AND ENDANGERED SPECIES MANAGEMENT

This area will be administratively classified as the Trail Creek Grizzly Bear Management Area. The Trail Creek area contains the finest known grizzly bear habitat in the Northern Continental Divide Ecosystem and all management activities will be oriented toward maintaining or improving grizzly bear habitat. Grizzly bear research will be focused in this area toward providing more baseline data. Subsequent research will study the grizzly bear's reaction to project activity. In order to better assure grizzly bear security, no timber harvesting will be scheduled. The unleased portion of the area will be proposed for withdrawal from mineral entry subject to valid existing rights for the first decade. Other existing and historic uses such as seismic surveys, woodcutting, and recreational use will be monitored to assure no adverse impacts to the grizzly bear. The Frozen Lake Road will be closed year long to public use, and additional road closures may be implemented if conflicts with grizzly management develop. This added security will contribute to both grizzly bear and gray wolf recovery.

While the management emphasis for this area is centered on the grizzly bear, there is a need to monitor and manage for the gray wolf, an endangered species that is apparently reinhabiting the area. There have been occasional rumors of mountain caribou sightings, and the area may be important to the recovery of that species. Grizzly management must be carefully evaluated to attempt to safeguard these other important wildlife species. While some management activities like road closures may benefit all three species, each species also has individual needs or conflicting needs which will be considered in project plans and biological assessments.

The Trail Creek Grizzly Bear Management Area is probably the most important wildlife habitat on the Flathead National Forest. Optimum management techniques for the grizzly, gray wolf and perhaps the woodland caribou are not known at this time. Considerable research needs to be done, and all management activities must be carefully analyzed and monitored. The management direction provided in this Plan is only the beginning of an evolving knowledge of threatened and endangered species management.

## 2. SUMMARY OF ROAD MANAGEMENT

Road management direction is covered under the Forest-wide and management area standards. This direction is summarized below for this Geographic Unit.

-- Road management direction from the Forest-wide standards for grizzly bear management will apply. Any additional security needs will be determined during project anaylsis.

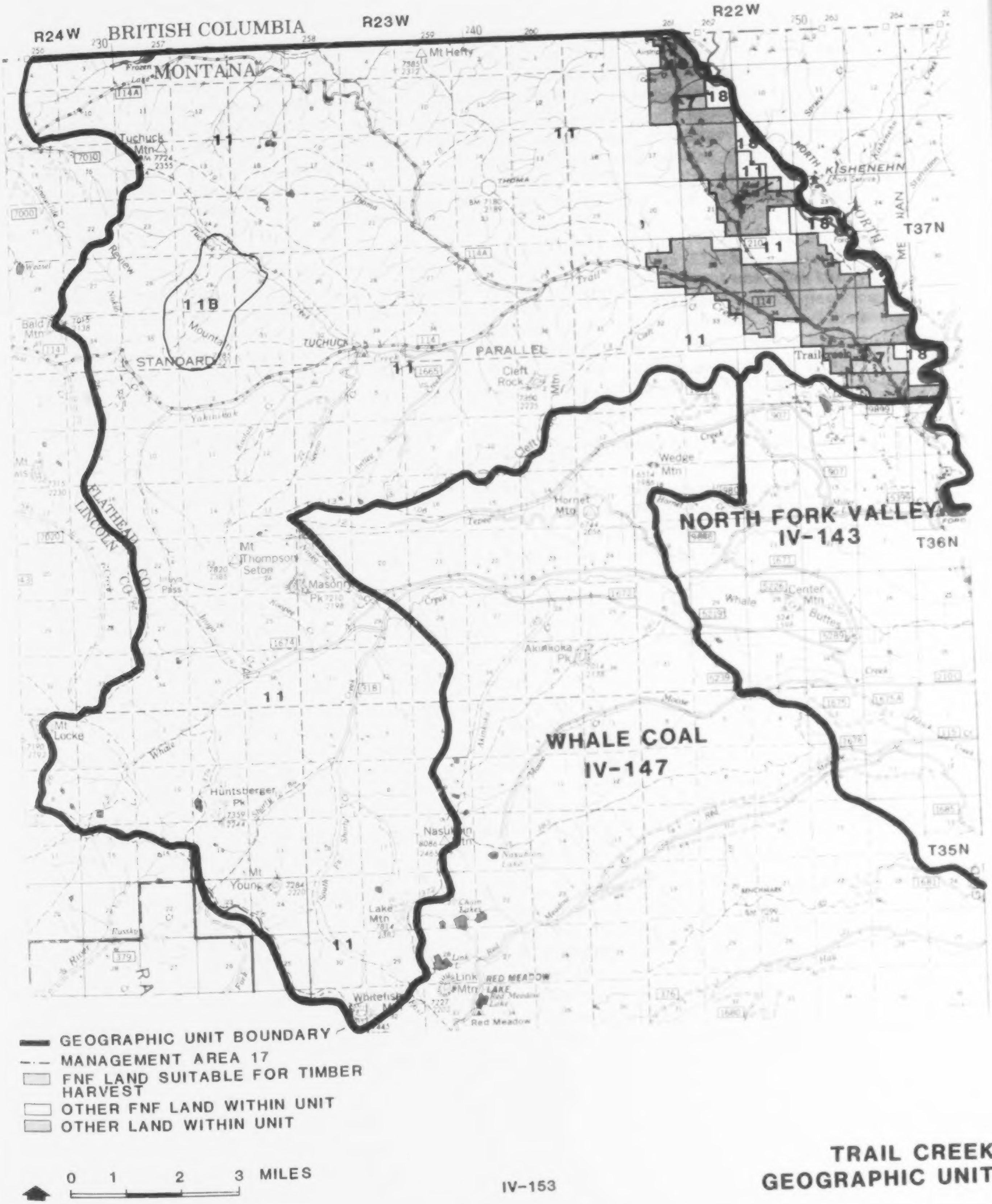
-- Management Area 11 - Apply motorized access restrictions from April 1 to November 30 to all roads except Trail Creek and the Lower portion of Thoma Creek Roads to provide security for grizzly bears. Access to Frozen Lake will be from the Kootenai National Forest.

-- In this Geographic Unit, apply no other road access restrictions except as necessary to meet Management Area objectives and protect the road surface, soil and water resources, and public safety.

## 3. SUMMARY OF MANAGEMENT AREAS

The Trail Creek Geographic Unit contains portions of Forest-wide Management Areas. The management direction for these areas is provided in Chapter III. The following tabulation, along with the information shown on the Geographic Unit map, summarizes the multiple-use management emphasis for each Management Area.

| Mgmt Area | Management Emphasis | Visual Quality Objective |
|---|---|---|
| 7 | Maintain a pleasing, natural-appearing landscape in which management activities, including timber management with roads, do not dominate. | Partial Retention |
| 11 | Maintain or enhance grizzly bear habitat. | Modification |
| 11B | Allow natural vegetative changes to occur with minimum interference. Area has been recommended for RNA designation. | Retention |
| 12 | Enhance riparian vegetative and wildlife diversity and maintain or enhance water quality and fisheries. | Partial Retention |
| 18 | Provide optimum opportunity for public use and enjoyment (Flathead Wild and Scenic River). | Partial Retention and Retention |


R24W
BRITISH COLUMBIA
R23W
R22W
MONTANA
Mt Hefty
Tuchuck Mtn
11
11B
Mountain
STANDARD
TUCHUCK
PARALLEL
Cleft Rock
Trail Creek
Frozen Lake
Thoma
NORTH KISHENEHN
T37N
T36N
T35N
18
17
Bald Mtn
Weasel L
Review
FLATHEAD CO
LINCOLN CO
Mt Thompson Seton
Mason Pk
Wedge Mtn
Hornet Mtn
Tepee
Akinkoka Pk
Center Mtn
Whale Buttes
NORTH FORK VALLEY
IV-143
WHALE COAL
IV-147
Mt Locke
Huntsberger Pk
Nasukoin Mtn
Mt Young
Lake Mtn
Link Lake
Link Mtn
RED MEADOW LAKE
Red Meadow
Whitefish Mtn
Whale
Moose
Meadow
RA
GEOGRAPHIC UNIT BOUNDARY
MANAGEMENT AREA 17
FNF LAND SUITABLE FOR TIMBER HARVEST
OTHER FNF LAND WITHIN UNIT
OTHER LAND WITHIN UNIT
0 1 2 3 MILES

## TRAIL CREEK
## GEOGRAPHIC UNIT

# V. Implementation

## INTRODUCTION

Implementation of the Flathead National Forest Plan requires moving from an existing land-use management program, with a budget and "targets" for accomplishment, to a new management program with a budget, goals, and objectives that provide a different way of addressing the issues and concerns people have voiced about Forest management. This document and its appendices provides the direction for management of the Flathead National Forest for the next 10 years when used in conjunction with Forest Service Manuals, Forest Service Handbooks, and the Northern Regional Guide.

This chapter on implementation explains how management of the Flathead National Forest moves from "Current Direction" and the existing situation (see Chapter VI) to the Preferred Alternative displayed in the EIS. The first section focuses on aspects of implementation that are influenced by previous management activities and objectives. The second section describes the relationship between project planning and activities and this Forest Plan. The third section addresses monitoring and evaluation. Plan revision and amendment are covered in the last section.

## INFLUENCE OF PAST MANAGEMENT ON FUTURE OPTIONS

As discussed and displayed in Chapters III (Management Area Direction) and IV (Geographic Units), the management direction for specific areas of the Forest is defined by this Plan. In some instances, this is a change from current management. Where no previous management activities have occurred, these areas can be brought under management from a neutral point; however, in areas where management activities have occurred to meet objectives other than those now specified by this Plan, some period of adjustment may be required to bring management fully into line with this Plan.

For example, in some of the visually sensitive portions of the Forest, timber harvest activities have modified the landscape. Under this Forest Plan, future management activities will be required to produce and maintain a landscape where management meets retention or partial retention visual quality objectives, thus protecting the visual landscape from a modified appearance. Viewshed analysis will be done for these areas prior to implementation of any more management activities. This analysis will specify if any additional modification of the landscape is necessary in the short term to correct the existing situation and meet the long-term retention or partial retention visual quality objectives.

In addition to specifying management direction for areas of the Forest, this Plan schedules management activities. Previous management activities influence the scheduling of future activities. Results from past experience and research were considered in the Forest planning process. For example, uneven-aged management using individual tree selection was used as the primary silvicultural system in the 1940's and early 1950's. Extensive use of uneven-aged silviculture was found to be ecologically unsound in Northern Rocky Mountain Forests where fire plays a dominate role. All-age stand structures suitable for application of uneven-aged systems are seldom found in Northern Rocky Mountain Forests.

Attempts to create all-aged stand structures from even-aged stands over time results in loss of shade intolerant species such as pine and western larch which cannot reproduce in shade. Buildup of ground fuel quantities and in vertical and horizontal fuel continuity as a result of uneven-aged management inevitably predisposes the stands to fire. Multistoried stands composed of shade tolerant species are also predisposed to natural insect and disease pathogens such as spruce budworm and root rots. Insect and disease problems are compounded by damage to the residual stand and to soils from frequent logging entries which are necessary to implement unevenaged systems. Frequent logging entries are also disturbing to important Flathead National Forest wildlife species such as grizzly bear, gray wolf, and elk.

The Forest determined from research literature and professional experience that uneven-aged silviculture is ecologically unsound for extensive application in the even-aged stands of the Flathead National Forest due to the problems described above. It was concluded that it was inappropriate to develope a Forest Plan alternative featuring uneven-aged management. These facts were considered early in the Forest planning process and incorporated into vegetative management guidelines for Habitat Type Groups (see Appendix I). These guidelines were used as minimum management requirements for the formulation of alternatives. Uneven-aged silviculture is appropriate for relatively small local areas when nontimber values are high such as in riparian areas. FORPLAN analysis data following alternative development further confirmed that selection systems are are not cost-effective timber harvest methods on the Flathead National Forest.

The transition from the timber volume objective of the past to the timber objective of this Forest Plan merits explanation.

Historically, the majority of timber management activities have occurred on the less than 40 percent slopes in the suitable timber base. These more gentle slopes constitute less than half (46 percent) of the total tentatively suitable timber lands.*

This Forest Plan schedules timber management in steeper, as yet undeveloped areas to avoid unacceptable impacts to other resources on the gentler slopes. This shift in the location of timber management activities has several significant implications. First the terrain and resource protection constraints associated with the steeper ground require the use of logging systems that historically have not been common in the Flathead National Forest. This Forest Plan requires a gradual shift toward more long-line cable logging systems. These systems are expensive to purchase and costly to use. They require a continuing program of timber sales to support their use. This plan will provide that continuing program, and Flathead National Forest management personnel will work with industry to implement the use of these logging systems and this program of timber management.

Sale layout on steeper slopes will be more difficult and costly to do than experienced in the past.

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* About 27 percent of the potentially suitable lands have 40-60 percent slopes, and 27 percent exceed 60 percent slope.

Site preparation on slopes over 40 percent will require broadcast burning or other nonmechanized methods, such as herbicides. This Forest Plan may require as much as a 500 percent increase in acres broadcast burned over what was burned in 1981. Experience, weather, manpower, and cost factors indicate that accomplishment of site preparation in a timely manner will be very difficult. Innovative methods of getting the task accomplished will be required. Additional training of fire personnel and use of contracts, burning teams, and fuel specialists may be required. Due to low slash volumes, short burning periods and brushy habitat types, the utilization of herbicides, including aerial application, may be required to accomplish site preparation objectives. Herbicides will be used only if the requirements of the Forest-wide guidelines can be met.

Reforestation on these steeper slopes will also be more difficult and costly to accomplish.

Implementation of this Forest Plan will mean there will be some individual timber sales which will have a negative cash flow when all costs (including transportation system development) are considered in relation to timber revenues from the timber harvest. These sales are referred to as "below-cost timber sales". The Forest Plan analysis of these sales are necessary to achieve both short-term and long-term benefits necessary to maximize net public benefits.

There are several reasons why these timber sales are necessary, and they are usually interrelated. The construction of roads for access to unroaded stands requires a heavy initial investment that may exceed the value of current standing timber, but returns from future timber harvests will amortize the costs and return a net benefit. The reasons existing timber may not recover costs often involve the geographic distribution of merchantable timber (e.g., the road may have to pass through immature timber with little current value to get to economically mature stands or current stands that are defective with low commercial value). Usually there are constraints involved with protection or enhancement of nontimber resources which do not permit exploitation of all the economic potential of existing stands in order to produce a positive cash flow on the initial entry. Examples of these constraints include design of harvest patterns to produce desired patterns of wildlife forage and cover, visual landscapes, soil and water protection, or fire fuels management.

Cost-efficient management emphasis for the Flathead National Forest requires that cash flow analysis must be a consideration in the economic analysis and development of project design in order to minimize negative cash flow projects (see Project Planning below). Forest Plan analysis data indicates "below-cost sales" cannot be eliminated entirely and still achieve projected short-term and long-term outputs.

Chapter II shows management objectives. Some of these objectives differ from those to which Flathead National Forest management has been responsive prior to implementation of this Plan.

Appendix M displays the 10-year scheduled timber sale offerings for the Flathead National Forest. As is more thoroughly explained in the introduction to that appendix, this schedule of sale offerings is designed to achieve the average annual harvest level of 100 MMBF of the Proposed Action (1000 MMBF per decade). This Forest Plan schedules a specific number of acres to be harvested (66,000 acres of regeneration harvest and 25,000 acres of intermediate harvest), resulting in a given timber harvest volume.*

Monitoring will focus on validating the following assumptions: (1) that the schedule of sale offerings will achieve the harvest acres specified in Chapter III; (2) that the harvest of those acres will result in 1000 MMBF over the decade; and (3) that the harvest of those acres and that volume results in the predicted environmental effects.

Implementation and monitoring of this timber management program are complicated by the continuing impacts of previous management activities. There are over 450 MMBF of timber volume sold but unharvested on the Flathead National Forest. This volume probably will be harvested over the next 2 or 3 years. The environmental effects of this harvesting activity will be different than if harvest had occurred in a steady pattern over time. Also, harvest of these acres will result in a large amount of site preparation and reforestation needs that are to be accomplished during the period covered by this Forest Plan. Monitoring of the continuing implementation of previous management activities will require evaluation and, if necessary, adjustment of this Forest Plan.

## PROJECT PLANNING

The Forest Plan serves as the single land management plan for the Flathead National Forest. All other land management plans have been replaced by the direction provided herein.

Similarly, this Forest Plan directs the management of all resources on the Flathead National Forest. All previous resource management plans are replaced by this document. Resource management objectives are displayed in Chapter II, and schedules of resource management practices for each Management Area are displayed in Chapter III. Schedules of management activities for the next 10 years are presented in Appendix M.

Several documents designed to give further guidance to management activities have been developed "under the umbrella of" this Forest Plan. They are:

- The Wilderness Fire Plan for the Bob Marshall Wilderness Complex
- Long-Range Mule Deer and Elk Winter Range Activity Schedule
- Long-Range Whitetailed Deer Winter Range Activity Schedule
- Long-Range Grizzly Bear Habitat Activity Schedule
- Area Transportation Document
- Landownership Adjustment Schedule

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* In the past, procedures scheduled a certain volume first, resulting in the number of acres to be treated.

## A. MANAGEMENT GUIDELINES

As mentioned in Chapter II, the management standards of this Plan supplement National and Regional guidelines provided through Forest Service Manuals and Handbooks and the Northern Regional Guide. Guidance is also provided by the appendices.

## B. PROJECT PLANNING AND ACTIVITIES

The management direction provided by this Forest Plan comprises the sideboards within which project planning and activities take place. It defines Management Area goals and management standards that guide project activities toward achieving a desired future condition for the management area and, collectively, for the Forest. It specifies a schedule for project activities (management practices). It provides guidance concerning potential landtype and habitat type constraints, including assumptions about the appropriate vegetation management practices for timber sale projects. On-the-ground project analysis validates or invalidates the appropriateness of those assumptions.

Within this guidance, the project is developed to most efficiently and effectively accomplish the management goals and objectives and to comply with all NEPA requirements.

This Plan attempts to resolve resource management conflicts by identifying the priority resource management goals for each Management Area (see Chapter III). For example, in Management Area 13, priority is given to management activities which improve mule deer and elk winter habitat; however, priority is not given to a single resource to the exclusion of other resources. All resources will be protected and managed to be consistent with the management goals of the area; thus, in Management Area 13, as long as it is compatible with and protects the winter range, timber can be harvested, water quality protected, recreation provided, and visual quality maintained. Project planning should recognize the significant other resource values in an area and manage them to the fullest extent possible while compatible with the management goals and projected costs.

The environmental analyses conducted for project activities, such as a timber sale, will be documented in a project file. The file will include the relevant guidance provided by the Forest Plan and the additional analysis developed by the project interdisciplinary team.

As part of project planning, site specific water quality effects will be evaluated and control measures designed to ensure that the project will meet Forest water quality goals; projects that will not meet State water quality standards will be redesigned, rescheduled, or dropped.

Economic analysis is required for all land disturbing projects over $25,000 in cost or value. The analysis will be appropriate to the scale and timing of the project and documented in the project file. It may be tiered to a previous analysis or it may be a comparison to a similar project. Examples are followup treatments such as overstory removal and salvage timber sales. The intent is to ensure that costs and benefits are examined, and that each project is considered in relation to other alternatives using accepted methods of economic analysis. Methods of economic analysis are described in FSH 1909.17, as well as in FSM 2431.22a (timber sale economic analysis) and FSM 7712.42 (transportation planning economic analysis). The economic analysis should be used to aid in decisionmaking, thus leading to improved resource management decisions. It is not a decisionmaking tool in itself. An economic analysis should include identification and consideration of the following points:

- Formulate and identify an alternative with cost efficiency as the primary consideration in meeting the objectives, along with other alternatives.
- For each alternative, identify which costs are considered mitigation costs. These are costs necessary to prevent loss of some value due to implementation of the project.
- For each alternative, identify which costs are enhancement costs. These are costs which could possibly be implemented as an independent project, but is considered as a part of a multiple-use project for cost efficiency.
- In addition to analysis of market priced benefits and experienced costs, nonpriced resource benefits and indirect economic benefits should be identified and documented for each cost category.

Project environmental analyses provide an essential source of information for Forest Plan monitoring. First, as project analyses are completed, new or emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the management area goals are validated by the project analyses. Third, the site specific data collected for project environmental analyses serve as a check on the correctness of the land designation. All of the information included in the project "environmental analyses" is used in the monitoring process to determine when changes should be made in the Forest Plan.

## C. PROJECTS AND MONITORING

Project environmental analysis provide an essential source of information for Forest Plan monitoring. First, as project analyses are completed, new or emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the Management Area goals are validated by the project analyses. Third, the site specific data collected for project environmental analysis serve as a check on the correctness of the land designation, Management Area goals, and Forest-wide management objectives. At the project level, the projections and assumptions made in the Forest Plan are evaluated. All of this information, documented in the project file, is used in the monitoring process to determine when changes should be made in the Forest Plan.

## MONITORING AND EVALUATION

Monitoring and evaluation comprises the management control system for the Forest Plan. It will provide the decisionmaker, and the public, information on the progress and results of implementing the Forest Plan.

Monitoring and evaluation entails comparing the end results being achieved to those projected in the Plan. Costs, outputs, and environmental effects, both experienced and projected, will be considered.

To do this, a comparison will be made, on a sample basis, of overall progress in implementing the Plan as well as whether the overall relationships on which the Plan is based have changed over time. When changes occur, they will be evaluated as to their significance, and appropriate amendments or revisions made.

The goals for monitoring and evaluating this Forest Plan are to determine:

-- if the Forest is achieving the goals and objectives of the Plan;
-- if standards and guidelines are being followed;
-- whether management standards and guidelines are achieving the desired future conditions for each Management Area;
-- if a number of assumptions, estimates, or hypotheses relating to resource effects, yields, values, and costs developed during this planning process are valid by testing and refining than;
-- if the dollar and manpower costs of implementing the Forest Plan are as predicted;
-- if individual management prescriptions are responding to existing and emerging public issues and concerns;
-- if management practices on adjacent or intermingled non-National Forest System lands are affecting the realization of Forest Plan goals and objectives;
-- if implementation of the Plan is affecting other agencies in reaching their objectives;
-- if research is needed to support the management of the Forest beyond that identified in Chapter II of the Forest Plan; and
-- for the responsible official and the public when there is a need to change management direction, or to revise or amend the Forest Plan.

Table V-1 displays the basic outline of the monitoring process. The monitoring and evaluation system is designed to indicate if programs are meeting Plan objectives and to identify where amendment or revision is warranted. The Acceptable Variability and Trends column defines the ranges or limits an activity can have. If outside the acceptable range, further evaluation will be necessary. A frequency for measuring the monitored item is also established.

The monitoring process consists of a variety of sampling methods, ranging from simple review of plans or reports to use of sophisticated data collection instruments in accordance with statistically valid sampling design. Many of these monitoring items are ongoing activities.

TABLE V-1 - Forest Plan Monitoring Requirements - Flathead National Forest

| Item No | Resource Unit of Measure | MIH Code | Evaluation Objectives for Outputs, Issues, & Management Concerns | Actions/Effects or Resources to be Measured | Data Source | * Accuracy | Monitor Frequency | ** Report Period | Comments on Variability & Trends |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Recreation<br>---<br>MRVD | A01 | To evaluate motorized & nonmotorized recreation use levels by ROS class & recreation activities to determine if a full range of quality recreation opportunity experiences are being achieved. | Actual use of developed & dispersed recreation by ROS class compare with projected use. User satisfaction & trends. | RIM Report & Field Observation, camera counters, user sampling. | 2 | 5 Years | 5 Years | Indicators of significant variation from expected use. |
| 2 | Recreation<br>---<br>Properties, Sites, & Acres | A02<br>A03<br>A04 | To evaluate selected cultural resource sites to determine if protection measures are sufficient to prevent deterioration. To determine if the Antiquity Acts are being followed during project planning & implementation. | Cultural Resource Protection. Determine protection compliance during project activity. Compliance to insure acts are being followed. | Cultural Inventories & 36 CFR 800. On-the-ground observation. Review resource project plans. | 2 | Annual | 5 Years | Destruction of known sites is unacceptable. Follow guidelines outlined in CFR 800. |
| 3 | Recreation<br>---<br>PAOT Days | A07 | To evaluate site & area facilities to determine if full-service level management is being achieved. | Improvement of sites & facilities to achieve full-service level. | RIM, Field Observation, Cleaning & Policing Standards, Travel Plan. | 2 | Annual | 5 Years | At least 90% PAOT days at FSL at end of 5-year period. |
| 4 | Recreation<br>---<br># of Projects & Acres Affected | A14 | To determine progress in achieving adopted VQO's. | Monitoring the effects of land resource activities in visual resource & cost of implementing various VQO's. | FMP, Project EA, Visual Mgmt System, Field Observation | 2 | Annual | 5 Years | A ±10% deviation in acres from prescribed VQO. |
| 5 | Recreation<br>---<br>Miles | A10<br>A11 | Provide adequate miles of trails to meet visitor needs. | Miles of trails constructed or reconstructed. | Project Plans & Inventories | 2 | Annual | 5 Years | A ±15% deviation from the decade objective of 50 miles is acceptable. |
| 6 | Recreation<br>---<br>Acres | A02 | Rate of change of roadless lands on the Forest. | Measure change in status. | Project Plans, EA, Transportation Plans | 2 | 5 Years | 5 Years | A loss of more than 15,000 acres by 1990 requires analysis and review of this trend. |

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|---|---|---|---|---|---|---|---|---|---|
| 7 | Wilderness<br>---<br>PAOT Days | B03 | To maintain a high level of wilderness recreation experiences. | Trail Conditions, Visitor Encounters, Range Conditions, Campsite Impacts | Limits of Acceptable Change Indicator & Standards Process (draft until FSM Supp), BM Wilderness Mgmt Standards & Guidelines, Visitor Contacts, Field Observations & Inspections | 2 | Annual | Annual | Exceeds Limits of Acceptable Change criteria. |
| 8 | Wildlife<br>---<br># of Whitetailed Deer | C01 | Change in whitetailed deer population status. | Whitetailed Deer Population | MDFW&P hunter questionnaires & check station data | 2 | Annual | 5 Years | Indicators point to significant change in population due to land management practices. |
| 9 | Wildlife<br>---<br>Percent | C01 | Change in whitetailed deer habitat status. | Percent of potential whitetailed deer winter habitat having acceptable forage/cover ratios. | Winter Habitat Transects | 2 | Annually<br>20% | 5 Years | Indicators point to significant change in population due to land management practices. |
| 10 | Wildlife<br>---<br># of Elk/Mule Deer | C01 | Change in elk/mule deer population status. | Elk and Mule Deer Population | MDFW&P hunter questionnaires & check station data. | 2 | Annual | 5 Years | Indicators point to significant change in population due to land management practices. |
| 11 | Wildlife<br>---<br>Percent | C01 | Change in elk/mule deer habitat status. | Percent of potential elk/mule deer winter habitat having acceptable forage/cover ratios. | Winter Habitat Transects | 2 | Annually<br>20% | 5 Years | Indicators point to significant change in population due to land management practices. |

* Accuracy, Precision, Reliability: Classification based on following scale:

1. Statistically based sampling methods.
2. Nonstatistical methods based on observation, comparisons, sampling of indicators, or estimates from field personnel.

** Interim reports may be provided on an annual basis if warrented.

TABLE V-1 - Forest Plan Monitoring Requirements

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|---|---|---|---|---|---|---|---|---|---|
| 12 | Wildlife<br>---<br>Pounds per Acre of Palatable Forage and Use | C01 | Change in elk/mule deer status. | Browse Production and Use | Winter Habitat Transects | 2 | Annually 20% | 5 Years | Indicators point to adverse changes in browse production and are due to land management practices. |
| 13 | Wildlife<br>---<br>Percent Change of Mapped Critical Elk Summer Habitat | C01 | Change in elk/mule deer status. | Change in Critical Elk Summer Habitats | Summer Habitat Inventory & MT Elk-Logging Guidelines | 2 | Annually 20% | 5 Years | Indicators point to adverse changes in habitat due to land management practices. |
| 14 | Wildlife<br>---<br># of Moose & Mountain Goat | C01 | Change in moose & mountain goat population status. | Moose/Mountain Goat Population | MDFW&P hunter questionnaire | 2 | Annual | 5 Years | Indicators point to change in population trends due to land management practices. |
| 15 | Wildlife<br>---<br>Percent Change in Acres of Suitable Old Growth | C01 | Change in riparian status. | Percent of Riparian Areas in Old Growth | Old Growth Transects | 2 | Annual 5% | 5 Years | Indicators point adverse changes in old-growth habitat due to land management practices. |
| 16 | Wildlife<br>---<br># of Grizzly & Wolf | C01 | Change in indicator species status. | Grizzly/Wolf Population | MDFW&P/USF&WS University research, field estimates, other indicators | 2 | Annual | 5 Years | Indicators point to change in population trends due to land management practices. |
| 17 | Wildlife<br>---<br>Percent Change in Grizzly/Wolf Habitat | C01 | Change in indicator species status. | Percent of Potential Grizzly/Wolf Habitat suitable and available for grizzly/wolf use | Habitat Transects | 2 | Annually 20% | 5 Years | Indicators point to adverse changes in habitat due to land management practices |
| 18 | Wildlife<br>---<br>Percent Change in Barred Owl Counts | C01 | Change in indicator species status. | Riparian Tree Habitat Change | Barred Owl Hooting Count | 2 | Annual | 5 Years | Indicators point to change in population trends due to land management practices |

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|---|---|---|---|---|---|---|---|---|
| 19 | Wildlife<br>---<br>Percent Change in Pileated Woodpecker Counts | C01 | Change in indicator species status. | Snag Cavity Dependent Habitat Change | Calling/Rapping Count for Pileated Woodpeckers | 2 | Annual | 5 Years | Indicators point to change in population trends due to land management practices |
| 20 | Wildlife<br>---<br># of Pelts | C01 | Change in indicator species status | Marten Populations | MDFW&P Furbearer Report | 2 | Annual | 5 Years | Indicators point to change in population trends due to land management practices |
| 21 | Wildlife<br>---<br>Percent Change in Marten Habitat | C01 | Change in indicator species status. | Tree-Dependent Habitat Change | USF&WS Suitability Model for Potential Marten Habitat | 2 | Annual | 5 Years | Indicators point to change in habitat trends due to land management practices |
| 22 | Wildlife<br>---<br># of Birds | C01 | Change in indicator species status. | Bald Eagle Population | Nest Surveys | 2 | Annual | 5 Years | Indicators point to change in population trends due to land management practices |
| 23 | Wildlife<br>---<br>Acres of Habitat | C01 | Change in indicator species status. | Availability of Potential Bald Eagle Nesting Habitat | Bald Eagle Nesting Model | 2 | Annually 20% | 5 Years | Indicators point to changes in habitaton trends due to land management practices |
| 24 | Wildlife<br>---<br># of Birds | C01 | Change in indicator species status. | Peregrine Falcon Population | Surveys of Nesting Habitat | 2 | Annual | 5 Years | Indicators point to changes in population trends due to land management practices |
| 25 | Wildlife<br>---<br>Acres | C01 | Changes in habitat improvement acres. | Wildlife Habitat Improved | Annual Wildlife Report | 2 | Annual | 5 Years | Indicators point to changes in habitat trends |
| 26 | Fish<br>---<br>Acres | C01 | Changes in fish habitat. | Fish Habitat Improved | Attainment Reports | 2 | Annual | 5 Years | Indicators point to the lack of fish habitat improvement |

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|---|---|---|---|---|---|---|---|---|---|
| 27 | Fish<br>---<br>Percent Change in Sediments in Stream Substratum | C01 | Changes in size & population of west slope cutthroat & bull trout as indicator species. | Changes in Fish Habitat: Sediment in Substratum, Pool Information, Thermal and Instream Cover | Attainment Reports, MDFW&P Reports, Stream Habitat Surveys Channel Stability | 1 & 2 | Annually 20% | 5 Years | Indicators point to changes in population trends |
| 28 | Fish<br>---<br>Change in WCT & Bull Trout Redds | C01 | Changes in size & population of west slope cutthroat & bull trout as indicator species. | Indicator Species WCT/bull trout. Fish population greater than 6". Redd Counts. | MDFW&P Reports, Fish Population Models | 1 | Annually 20% | 5 Years | Downward changes in Redd Count as a result of land management practices. |
| 29 | Changes in Water Temperature (°) | C01 | Changes in size & population of west slope cutthroat & bull trout as indicator species. | Indicator Species WCT/bull trout. | Instream Measurements | 1 | Annually | As part of WQ Report | Tempuratures are above threshold acceptable to moderator fish species |
| 30 | Range<br>---<br>AUM's | D02 | Determine if projections in Forest Plan are accurate. | Measure Livestock Forage Use | Grazing Statistical Report | 2 | Annual | 5 Years | ±25% of AUM, offered as projected in Plan. |
| 31 | Timber<br>---<br>MMBF | E00 | To validate that timber outputs concur with those planned, both area and volume. | Total Offered Volume | Quarterly Timber Sale Accomplishment Report | 1 | Annual | Annual | ±10% within the Plan projections |
| 32 | Timber<br>---<br>MMBF | E00 | To validate that timber outputs concur with those planned, both area and volume. | Total Sell Volume | Quarterly Cut & Sold Report | 1 | Annual | Annual | ±10% within the Plan projections |
| 33 | Timber<br>---<br>MMBF | E00 | To validate that timber outputs concur with those planned, both area and volume. | Total Cut Volume | Sale Reports | 1 | Annual | Annual | ±10% within the Plan projections |
| 34 | Timber<br>---<br>Acres & MBF | E00 | To validate that timber outputs concur with those planned, both area and volume. | Regeneration Harvest | Timber Stand Data Base | 1 | Annual | Annual | ±10% within the Plan projections |
| 35 | Timber<br>---<br>Acres & MBF | E00 | To validate that timber outputs concur with those planned, both area and volume. | Intermediate Harvest | Timber Stand Data Base | 1 | Annual | Annual | ±10% within the Plan projections |

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|---|---|---|---|---|---|---|---|---|---|
| 36 | Timber<br>---<br>Acres | E00 | Determine if LPP type harvest is being accomplished. | Lodgepole Pine Timber Type Harvest | Timber Stand Data Base | 1 | Annual | Annual | ±10% within the Plan projections |
| 37 | Timber<br>---<br>Acres | E00 | Determine if projected timber harvest of stands on slopes 40%+ is being accomplished. | Area Sold on Slopes 40%+ | Timber Stand Data Base | 1 | Annual | Annual | ±10% of projected acres. |
| 38 | Timber<br>---<br>Cu Ft/Acre | E00 | To validate timber yield projections. | Growth Trends as Related to Plan Yield Data | Permanent Growth Plots | 1 | 10 Years | 10 Years | ±10% of projected growth. |
| 39 | Timber<br>---<br>Acres | E04 | To assure that cutover areas are being regenerated within prescribed time limits & standards. | Regeneration Certified as Completed | Timber Stand Data Base | 1 | Annual | Annual | ±10% of planned accomplishment. |
| 40 | Timber<br>---<br>Acres | E05 | To validate stocking control projection indicated in the Plan. | Timber Stand Improvement Stocking Control | Timber Stand Data Base | 1 | Annual | 5 Years | ±10% of projected acres. |
| 41 | Timber<br>---<br>Acres | E04 | To assure that cutover areas are being regenerated within prescribed time limits & standards. | Site Preparation on Slopes Exceeding 40% | Timber Stand Data Base | 1 | Annual | 5 Years | ±10% of planned accomplishment. |
| 42 | Timber<br>---<br>MMBF | E00 | Assure that local timber industry has 2-3 years of timber supply under contract. | Relationship of Volume-under-Contract to 10-Year Average Cut Volume | Forest Cut & Sold Records | 1 | Annual | Annual | 200 to 300 MMBF under contract. |
| 43 | Timber<br>---<br>Acres | E00 | Review lands identified as not suitable for timber production. | Changes in Timber Land Suitability | Timber Stand Data Base, Forest Data Base, Field Surveys | 1 | 10-Years | 10-Years | 10% change in timber land suitability. |
| 44 | Timber<br>---<br>Acres | E00 | Evaluate size of harvest units to determine if size limits should continue. | Size of Harvest Areas | Timber Sale EA's | 1 | 5-Years | 5-Years | Reevaluate size of harvest units if current size is adversely affecting Forest goals. |
| 45 | Water<br>---<br>Variable | F09 | Evaluate change in water quality. | Sediment, Chemical, & Microbiological Components | Water Tests with Flow Measurements | 1 | 32-Sites 15-20/ Year | Annual | Within State and Federal water quality standards. |

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|---|---|---|---|---|---|---|---|---|---|
| 46 | Water<br>---<br>Acre Feet | F09 | Evaluate change in water yield. | Water Yield Change from Timber Harvest | Recording Stream Gauge | 1 | Continuous<br>4-Sites | Annual | Peaks within 10% of control. |
| 47 | Water<br>---<br>Tons/Acre Disturbed | F09 | Validation of sediment yield assumptions used in the Plan. | Sediment Yield | Suspended Sediment Samples, Channel Bottom Materials | 1 | Annual | Annual | ±20% of predicted yield. |
| 48 | Minerals<br>---<br>Acres Where Surface Resource Mgmt & Mineral Mgmt Objectives Conflict | G06 | Review effects of mineral activities on NF land management emphasis & direction & effects of surface resource management on mineral activities. | Review of FS projects that may have an adverse effect on mineral operations & effects of mineral operations on NF surface mgmt. | Review EA's & Operating Plans for All Proposed Minerals Projects | 2 | Continuous, with Annual Summary | 5 Years | Surface & subsurface resource outputs should not be reduced by more than 1% due to conflicts generated by the other. |
| 49 | Lands<br>---<br># of Acres Acquired | J13 | Are NF mgmt objectives & mgmt efficiency being impeded by lack of a viable landownership adjustment program. | Land Exchange Accomplishment | Case Files | 2 | Annual | 5 Years | Annual accomplishment must be within 10% of land adjustment targets. |
| 50 | Lands<br>---<br># of Acres Acquired | J15 | Are NF mgmt objectives & mgmt efficiency being impeded by lack of a viable landownership adjustment program. | Purchase & Donation | Case Files | 2 | Annual | 5 Years | Annual accomplishment must be within 10% of land adjustment targets. |
| 51 | Soils<br>---<br>Acres | F09 | Monitor soil compaction & displacement resulting from Forest management activities. | Measure soil compaction in timber sale & site preparation projects. | Sample Bulk Density | 1 | Annual First 5 Years & Year 10 | 5 Years | 5% loss in productivity on affected areas |
| 52 | Soils<br>---<br>Acres | F09 | Monitor soil compaction & displacement resulting from Forest management activities. | Soil displacement & accelerated erosion in project areas. | Sample Bulk Density & Soil Depth Transects | 1 | Annual First 5 Years & Year 10 | 5 Years | 5% loss in productivity. |
| 53 | Facilities<br>---<br>1. Miles<br>2. Miles/Sq Mi<br>3. MBF/Mi<br>4. Acres/Mi | L01 | Compare total miles & densities of roads & resources accessed & harvested to those projected in the Forest Plan. Verify Forest Plan road density coefficients. | System Inventory Transportation Planning:<br>1. Miles of Road<br>2. Road Density | TIS, Transporta-Plans, Transportation Maps | 1 | Annual | 5 Years | Additional miles may vary considerably by year but show stable trend for first decade. |

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|---|---|---|---|---|---|---|---|---|---|
| 54 | Facilities<br>---<br>1. Miles<br>2. Miles/ Sq. Mi. | L19 | Compare open miles of roads & densities to those projected. Compare with elk population & hunting objectives & with grizzly bear habitat objectives. | Road Management:<br>1. Miles of Road Open<br>2. Open Road Density | District Records, Road Mgmt Eng. Wildlife Species Travel Plan | 1 | Semi-Annual, Summer & Fall | 1991 & 1996 | Within guidelines established in Forest Plan. |
| 55 | Facilities<br>---<br>$/Mile<br>$/MBF<br>MBF/Mile | L02 to L18 | Keep construction/reconstruction costs in line with resources accessed & traffic service requirements. | Road Costs: Construction & Reconstruction Resources Accessed | Engineering Records, Timber Sales, Transportation Plans, Resource Management Records | 1 | Annual | Annual | Road costs should vary by landtype & logging system but be within ±25% of projections. Forest-wide trend should be stable thru 1st decade. |
| 56 | Facilities<br>---<br>$/Mile<br>$/MBF | L19 | Compare road maintenance activities & funding with projections in the Forest Plan. | Maintenance costs by: Function, Service Level, Maintenance Level | Road Maintenance Records, District Records | 1 | Annual | Annual | Maintenance costs should vary by functional class & maintenance levels Trend should show increased funding as miles increase. |
| 57 | Facilities<br>---<br>Miles | A12 | To evaluate the trail system & the associated facilities to determine maintenance needs due to changes in demands & trends. | Maintenance of the existing trail system. | Trail Inventory & Maintenance Criteria | 1 | Annual | Annual | 1. A loss of less than 2% of usable trail miles is acceptable.<br>2. A 10% or less increase in trail deterioration is acceptable. |
| 58 | Protection<br>---<br>Acres | P08<br>P09<br>P11<br>P12 | To insure that:<br>1. Treatment of activity fuels is accomplished as scheduled.<br>2. Accomplishment can be done within established air quality guidelines.<br>3. Treatment of natural fuels occurs within fire management areas. | Prescribed fire acreage. Wildfire acres burned annually & projected as average annual. Unplanned ignition prescribed fire acreage. Annual FFP, FFF, & NVC costs. | TSMRS, plus Accomplishment & Fire Reports | 1 | Annual | Annual | Less than 90% accomplishment of scheduled fuel treatment in 5 years, less than 75% accomplishment per year is unacceptable. |

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2. Nonstatistical methods based on observation, comparisons, sampling of indicators, or estimates from field personnel.

** Interim reports may be provided on an annual basis if warrented.

TABLE V-1 - Forest Plan Monitoring Requirements

| Item No | Resource Unit of Measure | MIH Code | Evaluation Objectives for Outputs, Issues, & Management Concerns | Actions/Effects or Resources to be Measured | Data Source | * Accuracy | Monitor Frequency | Report Period | Acceptable Variability & Trends |
|---|---|---|---|---|---|---|---|---|---|
| 59 | Protection<br>---<br>Acres & Board Foot Volume Loss | P34 | To insure management direction for the Forest Plan is adequate to deal with insect & disease problems. | Field verification of new insect & diseases & spread of existing infestations. | Regional Office Ground & Aerial Surveys | 2 | Annual | Annual | 20% increase in rate of spread & volume loss compared to predictions. |
| 60 | Economics<br>---<br>$ | T01 | Actual Forest Revenue. | 1. Total Forest Revenues.<br>2. Returns to Treasury.<br>3. 25% Fund Contributions. | Forest Records | 1 | Annual | 5 Years | ±50% variance of previous year. |
| 61 | Economics<br>---<br>$ per Unit of Output | T01 | Actual costs vs. projected budget estimates for achieving identified targets. | Cost of Producing Outputs | 1. PMARS<br>2. MARS<br>3. Forest Plan<br>4. DATA BASE | 1 | Annual | 5 Years | ±10% variance of projected costs/unit of key indicator outputs. (Adjusted by volume of outputs) |
| 62 | Budget<br>---<br>Changes in Annual Budget by Function | T01 | Cumulative effect of annual budget on:<br>a) Forest's ability to achieve projected resource management levels.<br>b) Present Net Value (PNV) of Forest resources. | Deviation in Funding Levels | 1. Budget Allocation<br>2. Forest Plan<br>3. RPA | 1 | Annual | Annual | Variably by resource. |
| 63 | Planning<br>---<br>Number of Issues & Concerns | T01 | Responsiveness of Forest Plan to existing & emerging issues & concerns. | Public comments on agency activities. | Letters<br>Appeals<br>Petitions<br>Newspapers | 2 | Semi-Annual | Annual | As needed. |

* Accuracy, Precision, Reliability: Classification based on following scale:

1. Statistically based sampling methods.
2. Nonstatistical methods based on observation, comparisons, sampling of indicators, or estimates from field personnel.

** Interim reports may be provided on an annual basis if warrented.

An annual monitoring program, developed in accordance with this monitoring outline (Table V-1), will be prepared as part of the Forest's annual work program. This program will include the details displaying amount and location of monitoring to be accomplished. A detailed program for water quality and fish habitat monitoring (1986-1995) was prepared in April 1985. This program is part of the Forest planning records. Similar detailed monitoring programs will be prepared for all resources and activities requiring monitoring. These programs will be based on funds currently available for monitoring. If monitoring funds are inadequate to properly monitor the Plan goals and objectives, an analysis will be made to develop a course of action that should be implemented. This may include Plan amendment, Plan revision, or dropping projects.

The results and trends of monitoring described in the annual monitoring report will be evaluated and reported to the responsible official. An evaluation report will be prepared at least every 5 years. Interim evaluation reports will be prepared as necessary.

The documented file of the Forest Supervisor's decisions resulting from monitoring and review is maintained for future use in amending or revising the Forest Plan. The evaluation report, as required by 36 CFR 219.12(k), will be prepared and submitted to the Regional Forester on a regular basis.

Evaluation of data gathered during monitoring will be guided by the Decision Flow Diagram detailed in Figure V-1. As indicated in the diagram, the results of this evaluation lead to decisions on further action of the following types:

- continuing the management practice;
- referring the problem to the appropriate line officer for improvement of the application of the management practice;
- modifying the management practice as a Plan amendment;
- modifying the land management prescription as a Plan amendment;
- revising the schedule of outputs;
- revising the cost/unit output; or
- initiating revision of the Plan.

The document resulting from the use of the Decision Flow Diagram constitutes the evaluation report. As applicable, the following will be included in each evaluation report:

- A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan;
- Documentation of measured effects, including any change in productivity of the land;
- Unit costs associated with carrying out the planned activities as compared with unit costs estimated during Forest Plan development;
- Recommendations for changes;
- A list of needs for continuing evaluation of management systems and for alternative methods of management;
- A list of additional research needed to support the management of the Forest; and
- Identification of additional monitoring needs to facilitate achievement of the monitoring goals.

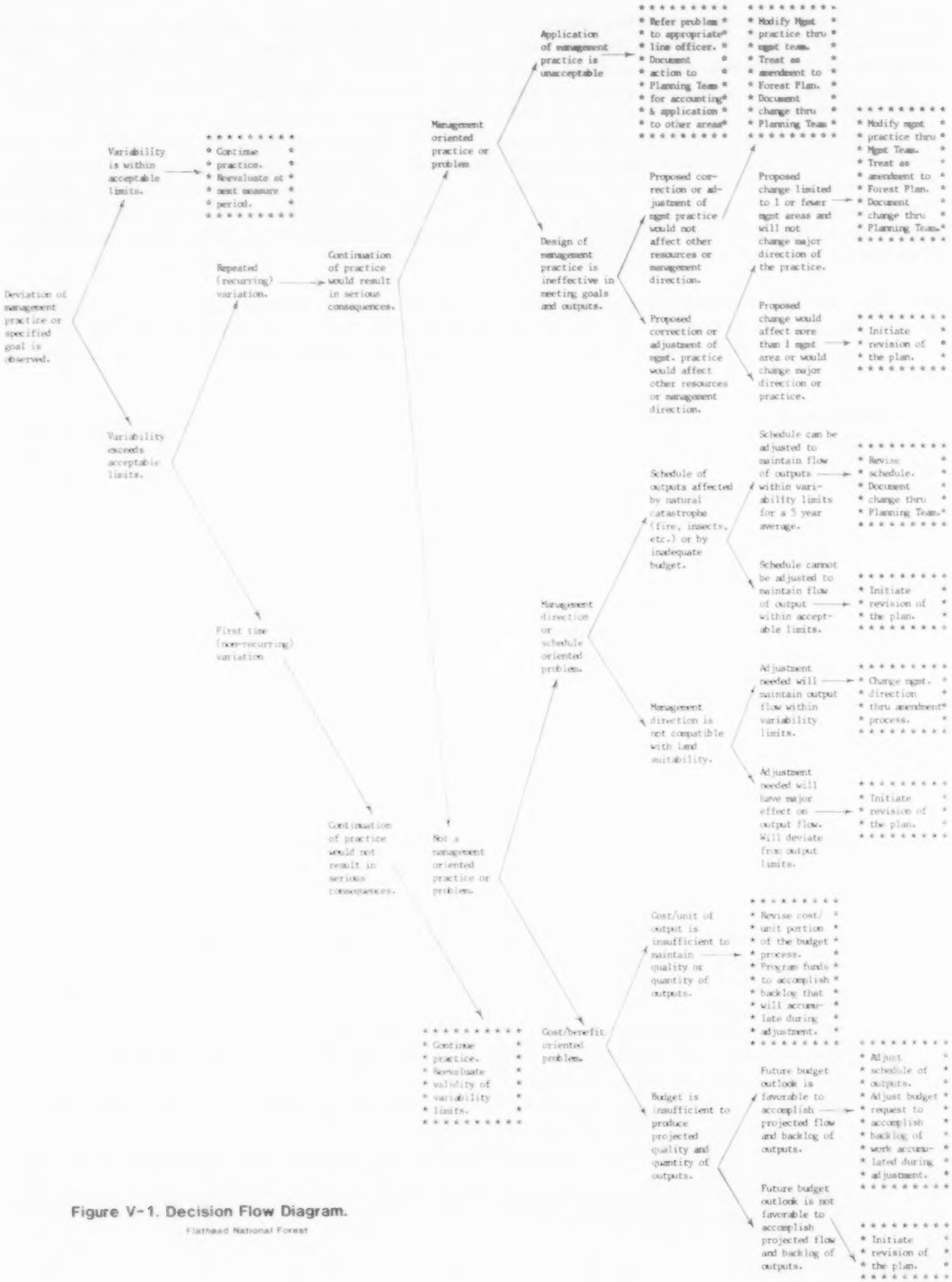
Deviation of management practice or specified goal is observed.
Variability is within acceptable limits.
Continue practice. Reevaluate at next measure period.
Variability exceeds acceptable limits.
Repeated (recurring) variation.
Continuation of practice would result in serious consequences.
Management oriented practice or problem
Application of management practice is unacceptable
Refer problem to appropriate line officer. Document action to Planning Team for accounting & application to other areas
Modify Mgmt practice thru mgmt team. Treat as amendment to Forest Plan. Document change thru Planning Team
Design of management practice is ineffective in meeting goals and outputs.
Proposed correction or adjustment of mgmt practice would not affect other resources or management direction.
Proposed change limited to 1 or fewer mgmt areas and will not change major direction of the practice.
Modify mgmt practice thru Mgmt Team. Treat as amendment to Forest Plan. Document change thru Planning Team.
Proposed correction or adjustment of mgmt. practice would affect other resources or management direction.
Proposed change would affect more than 1 mgmt area or would change major direction or practice.
Initiate revision of the plan.
First time (non-recurring) variation
Continuation of practice would not result in serious consequences.
Continue practice. Reevaluate validity of variability limits.
Not a management oriented practice or problem.
Management direction or schedule oriented problem.
Schedule of outputs affected by natural catastrophe (fire, insects, etc.) or by inadequate budget.
Schedule can be adjusted to maintain flow of outputs within variability limits for a 5 year average.
Revise schedule. Document change thru Planning Team.
Schedule cannot be adjusted to maintain flow of output within acceptable limits.
Initiate revision of the plan.
Management direction is not compatible with land suitability.
Adjustment needed will maintain output flow within variability limits.
Change mgmt. direction thru amendment process.
Adjustment needed will have major effect on output flow. Will deviate from output limits.
Initiate revision of the plan.
Cost/benefit oriented problem.
Cost/unit of output is insufficient to maintain quality or quantity of outputs.
Revise cost/unit portion of the budget process. Program funds to accomplish backlog that will accumulate during adjustment.
Budget is insufficient to produce projected quality and quantity of outputs.
Future budget outlook is favorable to accomplish projected flow and backlog of outputs.
Adjust schedule of outputs. Adjust budget request to accomplish backlog of work accumulated during adjustment.
Future budget outlook is not favorable to accomplish projected flow and backlog of outputs.
Initiate revision of the plan.

**Figure V-1. Decision Flow Diagram.**

Flathead National Forest

## AMENDMENT AND REVISION

Generally, revisions of the Forest Plan entail minor refinements that are based on project level environmental analyses and the monitoring and evaluation plan. Revisions may include modification of Management Area boundaries to more accurately represent management intent. Revisions may also include alteration of the management direction and Forest guidelines to better facilitate achievement of Management Area goals and Forest-wide goals and objectives. Revisions do not necessarily require amendment to or revision of the EIS if the intent of the Proposed Action and the associated environmental consequences do not change.

The Forest Supervisor may amend the Forest Plan. Based on an analysis of the objectives, standards, and other contents of the Forest Plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the Plan. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a Forest Plan. If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures.

A Forest Plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may be revised whenever the Forest Suprevisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in RPA policies, goals, or objectives would have a significant effect on Forest level programs. In the monitoring and evaluation process, the interdisciplinary team may recommend a revision of the Forest Plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of the Forest Plan. The Forest Supervisor shall review the conditions on the land covered by the Plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

# VI. Summary of the Analysis of the Management Situation

## INTRODUCTION

The NFMA (National Forest Management Act) regulations require an AMS (Analysis of the Management Situation) be made to determine the ability of the Forest to supply goods and services to meet society's demands. This analysis provides the information necessary for making decisions to change management direction. This information also guides the direction and extent of those changes.

The analysis considered four factors:

-- Availability of resources under the existing management situation.

-- Potential of the Forest to produce each resource.

-- Projected levels of use or public "demand" for Forest resources and opportunities to develop or use Forest resources.

-- Resource supply potential under the Forest Plan.

The availability of resources under the existing situation reflects historic and current management objectives and funding levels. These are not always congruent with the management direction established in Unit Plans and District Multiple-Use Plans.

The potential of the Forest to produce each resource is determined either using a computer analysis called FORPLAN or using best professional judgment and available data. Analyses were conducted to establish the supply potentials for timber, range, big-game winter forage, and wilderness using the computer model. Analyses conducted without the computer established the production potential for grizzly bear habitat and the supply potential for recreation. These maximum potentials are called "benchmarks."

The maximum potential for all resources cannot be met simultaneously because of the interactive and competitive relationship among resources.

Another maximum production benchmark was developed, using the FORPLAN model, that displays the mix of resource uses and schedule of resource outputs and costs that would result if economic efficiency were the primary management objective. This benchmark shows what the production capabilities of the Forest would be if PNV (present net value) were maximized.*

Also, a minimum production level benchmark was developed using FORPLAN, to indicate resource production levels and management costs that would result if the Forest were managed with a minimum budget sufficient only to maintain basic soil productivity, water quality, and existing investments.

The need to develop or use Forest resources were identified in the public issues and management concerns. In addition, the need to consider changes in management direction derive from estimates of future use of certain resources. Opportunities to change management are displayed in the analyses which define production potentials.

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* See the Glossary for definitions.

Supply potential of the Forest Plan is based on the resource managment objectives and land use designations associated with the management philosophy. An evaluation of the Forest's potential for meeting the recommended RPA program is included.

The following discussion is oriented toward those resources that were the focus of an issue or concern. This chapter does not document tha analysis of the management situation process but does display the information used as a basis for the management direction specified in this Forest Plan. Existing supply, projected "demand," the current management situation, and the Forest Plan are compared.

## RESOURCES

### A. RECREATION

1. **DEVELOPED RECREATION** on the Flathead National Forest includes both private and public facilities. Sixty-seven summer homesites and six resorts, including the Big Mountain Winter Sports Area, provided about 118,850 RVD's (recreation visitor days) in 1980, with the majority of that use occurring at the Big Mountain facility. Use of private summer homes and resorts, excluding Big Mountain, is about 15 percent of what these areas could provide if used to capacity.

   Public developed sites include 28 campgrounds and picnic areas. Additional developed site facilities include boat ramps, swimming areas, and trailhead facilities. Actual use of public sites in 1980 was 170,500 RVD's. This level of use is about 65 percent of optimum, indicating use that is relatively high but generally not in excess of capacity. Use at public developed sites varies widely between Districts and between sites; thus, some sites may be used at or in excess of capacity while others are infrequently utilized.

   All but two of the public campgrounds and picnic areas are currently operating at a reduced service level and, in some cases, limited funding has resulted in maintenance that does not meet reduced service level standards. At some of the more heavily used sites, current facility maintenance does not always keep up with normal wear and tear, resulting in site and facility damage.

   Developed site recreation visitor day capacity provided by existing public and private facilities (1,031,000 RVD's) exceeds the Forest's RPA objectives through the year 2030. Assuming that the Flathead National Forest will continue to provide the same proportion of developed recreation use as it did in 1980, that the land base will remain constant, and that increases in developed recreation will be proportionate to population increases in the Forest's zone of influence, developed recreation demand or use will increase 30 percent from 1980 to 1990 (see Table VI-1). Much of this increase in participation at developed sites relates to downhill skiing. A significant increase in use of public campgrounds and picnic areas is indicated, probably exceeding the existing capacity in 50 years, however, no new capacity will be needed in Decade one.

Table VI-1 Recreation Potential, Existing Use, Projected Demand, and RPA Objectives (Average Annual RVD'S) - Flathead National Forest

| | Maximum Production Benchmark (Capacity) | 1980 Actual Use** | Projected Levels of Use*** Year/RVD's | RPA Objectives Year/RVD's |
|---|---|---|---|---|
| Developed Recreation (RVD's) | 1,031,000 | 289,400* | (1985) 329,000 | (1980) 320,304 |
| | | | (1995) 402,700 | (1990) 343,190 |
| | | | (2005) 493,700 | (2000) 327,790 |
| | | | (2015) 601,300 | (2010) 337,560 |
| | | | (2025) 731,500 | (2020) 354,470 |
| Dispersed Recreation (RVD's) | | 500,500 | (1985) 568,100 | (1980) 597,333 |
| | | | (1995) 757,000 | (1990) 647,000 |
| | | | (2005) 989,800 | (2000) 702,000 |
| | | | (2015) 1,226,500 | (2010) 745,000 |
| | | | (2025) 1,600,500 | (2020) 773,900 |
| Wilderness Recreation | 468,000 | 137,000 | (1985) 204,800 | |
| | | | (1995) 315,000 | |
| | | | (2005) 451,000 | |
| | | | (2015) 612,700 | |
| | | | (2025) 807,700 | |

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* Corrected RIM (recreation information management) data, reflecting change in the RVD's reported for The Big Mountain Ski Winter Sports Area.

** Actual use data is drawn from RIM - an inventory system with data collection problems that make the information available for the Forest inexact; however, this is the best available information.

*** Projections for the Flathead National Forest were developed by the Northern Regional Office specifically for use in Forest planning. The simple linear regression model is based on population trends in western Montana and past reported recreation use on the Forest. As with any set of projections, these are more valid in the short run as opposed to the long term.

Under this Forest Plan, the existing capacity of public developed sites would be maintained. No additional facilities are scheduled for construction. The maintenance of public sites would improve over the existing situation as all campgrounds and picnic grounds would be maintained at the full-service level to provide the visitor with a pleasant recreation experience.

The Big Mountain Winter Sports Area has reached the level of expansion allowed for in the 1975 Big Mountain Ski Resort Area Master Plan. This Forest Plan allows Big Mountain to expand its existing site and capacity as outlined in the 1984 Master Plan.

2. **DISPERSED RECREATION** is considered to be that occurring either in the unroaded Forest environment or throughout the roaded Forest. Of the Forest's approximately 500,500 RVD's of use in dispersed areas, about 77 percent occurred in a roaded environment (including activities such as berrypicking, snowmobiling, fishing, hunting, driving for pleasure, and roadside camping) while 23 percent occurred in an unroaded environment (backpacking, hiking, fishing, hunting, and so on). Use is unevenly distributed across the Ranger Districts.

Dispersed recreation opportunities in the existing unroaded environment are not being fully realized. Limited funding has led to deteriorated and inadequate trailhead facilities, including trail signing, and a low level of trail maintenance. In a 1980 survey of the trail system based on the Northern Region's accessibility criteria, only 43 percent of the trail system was adequate. Thus while 386,000 acres are managed to provide unroaded recreation opportunities, actual opportunities are low. In addition, existing management direction does not always assure that roadless acres with high recreation values are managed as such.

Assuming that the Forest will continue to provide almost the same proportion of roaded and roadless dispersed recreation opportunities that it did in 1980 and that the land base will remain the same, projected dispersed recreation use, displayed in Table VI-1, will almost double the 1980 situation by the turn of the century.

RPA objectives for dispersed recreation opportunities on Flathead National Forest appear to be conservative given existing projected use. By the year 2030, the Forest is expected to provide the capacity to absorb 774,000 RVD's for both roaded and roadless dispersed recreation use while projected use exceeds that level by 1995.

The dispersed recreation opportunities provided under this Forest Plan would exceed those currently offered, be adequate to meet projected levels of use and exceed the RPA objectives.

About 264,000 RVD's of the total recreation capacity would be provided on 296,000 roadless acres. Land designations had to be made now to maintain sufficient roadless acres to provide capacity near the projected levels of use in the fifth decade, thus short-term needs are exceeded. Increased funding levels prescribed by this Plan would allow for improved trail maintenance, trailhead facilities, and visitor information services. The recreation capacity of the unroaded environment would be increased, provild be increased, providing more high quality recreation opportunities on fewer acres. The majority of the roadless acres are nonproductive lands where no timber harvest would be scheduled, whatever the management direction for the area. This Plan provides the opportunity to shift some backcountry use from the wildernesses, where use rapidly approaches capacity, to other roaded recreation opportunities (totaling 1,335,000 RVD's) would occur in conjunction with other Forest management activities. Capacity is somewhat constrained by the road management program.

Specially designated recreation areas contribute substantial recreation opportunities. These areas on the Flathead are:

### a. The Flathead Wild and Scenic River System

The three forks of the Flathead River classified under the Wild and Scenic River Act consist of two "Wild" segments, three "Recreational" segments, and one "Scenic" segment, totaling 219 miles of classified river. Total use of the designated portions of the Flathead River has increased 77 percent from classification in 1978 to 1980. Currently 10 river outfitters operate on the river under special-use permits.

Management of the Flathead Wild and Scenic River was developed in conjunction with Glacier National Park and management responsibilities are shared with the Park. Existing management is directed toward mitigation of resource damage on a priority basis as funding permits. Revised management direction was given public review in 1984 and those public comments are currently being analyzed.

A higher funding level for the Flathead Wild and Scenic River would mean high levels of visitor contact and education, reducing litter, trespass, and conflict between private landowners and recreationists; and funding for interagency coordination, data gathering, resource monitoring, and river management planning.

### b. Jewel Basin Hiking Area

Jewel Basin was classified by the Regional Forester as a Special Roadless Area in 1970. The 15,368 acres have been managed to provide roadless backcountry hiking opportunities. Motorized use and horse travel have been prohibited. Hiking use in Jewel Basin has increased 500 percent from 1970 to 1980 in spite of relatively poor access from the west side which is closest to area population centers. Funding for management of the areas has been low, resulting in limited trail maintenance, adverse site impacts, and violations of restrictions on motorized and horse use.

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**Under this Forest Plan, the current 15,368 acre Jewel Basin plus an additional 16,415 acres are being recommended for wilderness classification. If Jewel Basin is not classified as wilderness, the Forest plans, during decade 1, to review current management direction and the current boundaries.**

## B. VISUAL QUALITY

The scenic environment throughout the Flathead National Forest is diverse. Much of the Forest maintains a natural or near natural appearance. Only a relatively small percentage of the Forest shows signs of modification by people. The majority of the modifications that do occur are due to activities associated with timber management.

The wildernesses, which comprise 46 percent of the Forest, are managed with objectives that preserve their visual quality. Similarly, the Jewel Basin Hiking Area and the "Wild" segments of the Flathead Wild and Scenic River have preservation visual quality management objectives.

In addition, 40 percent of the nonwilderness Forest is considered to be visually sensitive. That is, 519,358 acres of the Forest are frequently viewed by Forest visitors and area residents who expect and desire a landscape where man's activities are not dominant. In these areas the visual quality objectives are retention (where man's activities are not visible) or partial retention (where man's activities do not dominate the landscape). A significant proportion of these acres are steep (slopes greater than 40 percent), have poor ability to absorb man's activities without visually evidencing change, and have not been impacted by timber management activities.

Current Direction for areas with Unit Plans specified management that is responsive to recommended visual quality objectives. In other areas of the Forest managed under the older District multiple-use plans, the recommended objectives are not met by existing direction. In some of these are critical viewing areas, the visual quality has been degraded, and others would be over time under Current Direction.

This Forest Plan provides land designations that retain 75 percent of the potential visual quality objectives. On all critical viewing areas, visual quality objectives would be either retention or partial retention.

## C. WILDERNESS

The Flathead National Forest administers all of the Mission Mountains and Great Bear Wildernesses and about 70 percent of the Bob Marshall Wilderness. These areas comprise about 5 percent of the National Wilderness Preservation System in the lower 48 States and about 46 percent of the Forest's land base.

The Mission Mountains Wilderness is located on the east side of the Mission Mountain Range. On the west side is The Confederated Salish and Kootenai Tribal Wilderness, recently designated for preservation. The majority of recreationists in the Mission Mountains are drawn from the Forest's zone of influence. About 97 percent of the use is on foot, and the length of stay averages 1.7 calendar days. Heavy recreational traffic in two drainages where lakes are only a short hike in from the road have necessitated area closures to forestall further resource damage. Although portions of the wilderness are heavily used, other areas are rarely visited. Recreation use has been stable for several years, with about 15,000 RVD's of use per year.

The Bob Marshall and Great Bear Wildernesses are considered part of a contiguous wilderness complex that includes these two areas managed by the Flathead National Forest, as well as the remainder of the Bob Marshall managed by the Lewis and Clark National Forest and the Scapegoat Wilderness managed by the Helena and Lolo National Forests. The Bob Marshall complex is the second largest contiguous Wilderness in the continental United States, and the Flathead Forest manages 65 percent of it, 286,700 acres as the Great Bear Wilderness, and 709,356 acres of the Bob Marshall Wilderness.

In contrast to the Mission Mountains, the Great Bear and Bob Marshall attract more out-of-state visitors, particularly in the fall during hunting season when use is heavy. Length of stay averages nearly 5 calendar days in the Great Bear and about 5.7 calendar days in the Bob Marshall. Horseback traffic accounts for about half of the use of these areas. The Great Bear currently receives less recreational use, but visitor days have been increasing to 23,000 RVD's in 1980. The Bob Marshall receives very heavy traffic along the South Fork corridor and through Holland Pass, but use in other portions of the wilderness is comparatively light. Total recreation visitor days in 1980 in the Flathead National Forest portion of the Bob Marshall were 94,000. The concentrated use in the Bob Marshall has led to resource degradation in certain areas as evidenced by overgrazing and worn trails.

About 50 outfitters operate in the Flathead National Forest portion of the Bob Marshall and in the Great Bear and Mission Mountains Wildernesses. At this time, the number of special-use permits for outfitters is held constant pending completion of the Forest Plan and wilderness carrying capacity studies. This carrying capacity study, known as LAC (limit of acceptable change) is currently being reviewed by the public and will likely result in some wilderness management changes in Decade 1.

The three wildernesses provided 137,000 RVD's of use in 1980. Wilderness use on the Flathead National Forest is predicted to double by 1995 and quadruple by 2025. Based on these assumptions, demand for wilderness recreation will exceed the capacity of the wildernesses by the year 2000 (see Table VI-1). The level of use is projected to exceed the maximum potential of the Flathead National Forest to provide for wilderness recreation.

Under the Forest Plan, higher levels of funding would allow for mitigation of existing resource degradation. Recreational use of the wildernesses would be highlighted in addition to preservation of the wilderness resource. Increased funding would permit accommodation of increased use assuming that trails would be maintained so use can be dispersed, visitor information and education is improved so user impacts are reduced, and special-use permits are strictly administered to minimize potentially adverse impacts. This Forest Plan proposes to add 98,080 acres to the National Wilderness Preservation System. Still, capacity of the wildernesses will be exceeded by the year 2000.

## D. ROADLESS

Most Flathead National Forest roadless areas are areas of the Forest that have never been developed because it has not been economically or socially desirable to do so.

Seventeen roadless areas were inventoried and evaluated in RARE II and were designated for nonwilderness uses in the 1979 Final Environmental Impact Statement. Since 1979 nonwilderness activities such as timber harvest and roading have occurred in some of the areas resulting in a reduccion in the amount of roadless land. Roadless areas evaluated for wilderness prior to RARE II in a "Unit Plan" also called for nonwilderness management.

The Forest presently has approximately 495,400 acres of inventoried roadless lands that qualify for inclusion into the National Wilderness Preservation System. They provide the potential for meeting some of the National, Regional, and Forest wilderness need because of the opportunity for solitude, primitive recreation, natural intergrity, and outstanding scenery and appearance.

As mentioned above under Wilderness, this Forest Plan proposes to add 98,080 acres to the National Wilderness Preservation System. These acres come from the inventoried roadless lands on the Forest. The following tabulation displays the proposed acres by their common roadless area locations (all are from the Bear-Marshall-Scapegoat-Swan roadless area).

| | |
|---|---|
| Middle Fork Flathead River | 6,295 Acres |
| East Side South Fork Flathead River | 5,187 Acres |
| Swan Crest | 31,783 Acres |
| Swan Front | 54,815 Acres |

The remaining inventoried roadless lands will be managed under this Forest Plan with the following management emphases:

| | |
|---|---|
| Lands Managed as Roadless | 188,054 Acres |
| Lands Managed with Minimal Investment | 2,150 Acres |
| Lands Managed for Wildlife | 88,411 Acres |
| Lands Suitable for Timber Management Where Timber Harvest will be Scheduled | 118,735 Acres |

## E. WILDLIFE AND FISH

The Flathead National Forest provides habitat for approximately 250 species of wildlife and 22 species of fish. National Forest management of wildlife and fish populations is oriented toward protection and improvement of fish and wildlife habitat.

### 1. FISH

There are approximately 3,400 miles of streams on the Forest, about half of which support fish populations. About 600 miles of these streams with viable fish populations are located in wildernesses, with 1,100 miles of stream fisheries occurring throughout the remainder of the Forest. The streams generally have low-to-moderate levels of productivity. Sixteen streams on the Forest are closed to fishing because of their high quality spawning and nursery habitat. Twelve of these streams provide critical spawning and rearing habitat for bull trout and cutthroat trout and are essential to maintenance of these sport fisheries in Flathead Lake. In addition, four streams in the Swan River drainage are closed to fishing because of their importance as spawning and rearing habitat for migratory bull trout from Swan Lake. Four streams on the Forest contain essentially pure populations of westslope cutthroat trout.

Based on fish population counts and productivity modeling using habitat parameters, the Forest's waters are estimated to support about 1,500,000 trout and 350,000 whitefish.

Most trout populations in the lakes and rivers of the Flathead River drainage are dependent on tributary streams for spawning and rearing. Flathead National Forest streams support about 53 percent of the Flathead River System's migratory fishery and are essential to maintaining sport fisheries throughout the Flathead River System.

In 1980 the Forest received about 89,000 recreation visitor days of fishing use. Fishing use generally is expected to increase commensurate with increases in recreational activities. Based on recent trends, "float fishing" on the Flathead Wild and Scenic River and fishing from small rafts on some of the more remote lakes will increase more than streamside or lake edge fishing. Fishing pressure on some of the Forest's streams and lakes is causing resource damage and/or decreased fish populations.

The potential to increase fish populations exists through making investment in fish habitat improvements. Production potential for fish is limited by the low productivity of Forest streams. The maximum increased production potential for the Forest associated with direct habitat improvement is about 30,000 fish per decade.

For analysis purposes, it was assumed that Forest management activities do not affect lakes or wilderness stream fish populations. The comparison of the Forest Plan to Current Direction focuses on impacts to trout populations in nonwilderness ("managed") streams. In these streams, timber management activities, including road construction and maintenance can adversely affect fish habitat. Conversely, fish habitat improvement projects can improve habitat and mitigate some adverse impacts.

Current management direction adversely impacts trout populations as displayed in Table VI-2. Riparian management under Current Direction does not provide opportunities for fisheries habitat improvement.

Under the Forest Plan, populations of trout in nonwilderness streams increase and peak in Decade 3 as habitat improvement projects are implemented. Projected increases in timber harvest activities after Decade 3 would theoretically cause numbers to decrease, but Decade 5 numbers would still exceed the current level.

**TABLE VI-2 CATCHABLE TROUT* (POTENTIAL AND EXISTING)*** - Flathead National Forest**

| | | |
|---|---|---|
| Current Situation (1980 - Base Year) | Lakes | 987,000 |
| | Nonwilderness Streams | 473,000 |
| | Wilderness | 60,000 |
| | Total | 1,520,000 |

| | | Decade | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| Current Management Direction | Lakes | 987,000 | 987,000 | 987,000 | 987,000 | 987,000 |
| | Nonwilderness Streams | 432,390** | 395,010 | 315,060 | 254,030 | 178,810 |
| | Wilderness | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 |
| | Total | 1,479,390 | 1,442,010 | 1,362,060 | 1,301,030 | 1,225,810 |
| Forest Plan | Lakes | 987,000 | 987,000 | 987,000 | 987,000 | 987,000 |
| | Nonwilderness Streams | 548,200 | 609,244 | 605,311 | 600,181 | 565,252 |
| | Wilderness | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 |
| | Total | 1,595,200 | 1,656,244 | 1,652,311 | 1,647,181 | 1,609,252 |

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* Population estimates and projections are based on the Forest's indicator species (bull trout and westslope cutthroat trout) which are most sensitive to impacts to water quality.

** These figures reflect the change that would occur in the first decade, and can be compared to the estimates of existing population.

*** Catchable trout numbers presented here are population estimates.

It is unlikely that other fish species would decline at the same rate that trout populations do. In some instances, many species, including nongame fish, would thrive and even increase.

## 2. BIG GAME

Estimated existing and potential population levels for elk, mule deer, and whitetailed deer are shown in Table VI-3 and Table VI-4. Winter range forage is generally believed to be the factor limiting population growth.

Not all the animals that inhabit Flathead National Forest lands in the spring, summer, and fall actually winter on Forest lands. The Flathead National Forest has a better opportunity to influence elk and mule deer populations than whitetailed deer, whose numbers are limited by the management of winter ranges on State and private lands.

Some of the winter ranges on National Forest System lands are within the wildernesses where forage production cannot be manipulated. Thus, the potential populations supported by wilderness winter ranges are generally constant, fluctuating only with weather patterns and successional stages of plant growth. About 40 percent of the Forest's current total elk and mule deer population of about 2,000 animals winters within the wildernesses.

Utilizable winter range forage production outside wildernesses can be increased through timber harvest carefully designed and scheduled to increase forage production while retaining the desired relationship of tree cover to available forage. Timber harvesting in the past has been concentrated in easily accessed areas with low logging costs, resulting in heavily roaded and logged whitetailed deer winter ranges. The lack of sufficient cover and poor distribution and size of foraging areas limits the effectiveness of whitetailed deer winter range. Generally in steeper areas, much of the elk and mule deer habitat is in a natural condition, resulting in few forage areas. To date, winter range management objectives have not influenced timber harvest activities to any significant extent. Prescribed burning of winter range areas has been the major habitat improvement activity.

Maximum potential for winter range forage production requires time to attain the correct cover-to-forage relationship. The Forest by the fifth decade could provide forage on lands outside the wildernesses to support over 9,800 elk and mule deer, if that were the sole management objective and all potentially suitable winter range was managed as winter range (see Table VI-3). If the wilderness animals are included, the Forest's forage could support 11,800 elk and mule deer.

Increased levels of hunting pressure are anticipated if current trends continue. In 1980 the Forest experienced 60,000 RVD's of hunting, an increase of 20 percent over 1970.

**Table VI-3 Elk and Mule Deer Potential Populations* - Flathead National Forest**

| Decade | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Maximize Winter Range Forage Benchmark** | 5,647 | 6,380 | 8,540 | 9,227 | 9,807 |
| **Current Management Direction** | 5,928 | 6,075 | 6,711 | 6,837 | 6,698 |
| **Forest Plan** | 5,503 | 5,706 | 6,716 | 7,350 | 7,800 |

* Total potential elk and mule deer supported by winter range forage includes nonwilderness animals plus a constant 2,000 animals assumed to be in the wildernesses.

Table VI-4 Whitetailed Deer Potential Populations - Flathead National Forest

| Decade | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Maximize Winter Range Forage Benchmark | 1,093 | 1,307 | 1,960 | 2,160 | 2,360 |
| Current Management Direction | 1,173 | 1,217 | 1,408 | 1,445 | 1,404 |
| Forest Plan | 1,047 | 1,108 | 1,410 | 1,610 | 1,734 |

The Forest Plan requires that over 95 percent of the potential suitable elk and mule deer and about 75 percent of the potentially suitable whitetailed deer winter ranges be managed to achieve desired cover/forage relationships and maximum forage production. By the fifth decade, the Forest could support 7,800 animals on elk and mule deer winter range.

## 3. THREATENED AND ENDANGERED SPECIES

The Flathead National Forest provides habitat for three endangered species (the gray wolf, bald eage, and peregrine falcon) and one threatened species (the grizzly bear). The Forest is cooperating with State and private wildlife organizations to assess the existence and potential of mountain caribou in the Whitefish Mountains. If located, the caribou would probably be listed as an endangered species in Montana.

The most likely area for maintenance of a viable population of wolves is in the north end of the Forest, adjacent to Glacier National Park and Canada. Forest biologists estimate the current wolf population at 10-20 animals whose home range includes British Columbia and Glacier National Park. At this point security from human disturbance appears to constitute the most critical habitat component.

The Flathead National Forest provides about 65,930 acres of suitable nesting habitat for bald eagles, with 10 active nests on or adjacent to National Forest System lands and nine birds fledged in 1980.

Although the Forest provides approximately 59,000 acres of suitable nesting habitat for peregrine falcon, there are no verified active nests at this time.

Most of the Flathead National Forest is considered essential grizzly bear habitat in the Grizzly Bear Recovery Plan prepared by the U.S. Fish and Wildlife Service. This includes all of the wilderness and nonwilderness acres of the Forest except the 70,000-acre "Island Unit" of the Swan Lake Ranger District (located west of Kalispell) and approximately 175,000 acres of the Tally Lake Ranger District west of Highway U.S. 93. Forest biologists estimate the existing population to be between 150 and 180 grizzly bears.

The grizzly bear habitat improvement program to date has consisted largely of implementing road restrictions to increase bears' security from human disturbance and some prescribed burning in bear feeding areas to increase browse production.

The Grizzly Bear Recovery Plan identifies a target recovered grizzly bear population in the northern Continental Divide ecosystem. The Flathead National Forest is responsible for a portion of this population. This means the Forest would need to provide the essential habitat components necessary to potentially support approximately 207 bears, utilizing a high level of road restrictions and habitat improvement techniques, including timber harvest, planting of desirable shrubs such as huckleberries, and prescribed burning.

**Maximum production potential, if all prime grizzly bear habitat were managed "for" grizzly bears, would be habitat to support 230 to 250 bears.**

**The Forest under this Forest Plan would provide habitat to meet the intent of the Grizzly Bear Recovery Plan, increasing the desirable habitat from the existing level. This Plan includes detailed Grizzly Bear Management Guidelines for all occupied habitat. About 94 percent of occupied habitat is classified as Management Situation 1 and 5 percent as Management Situation 2. About 109,000 acres would be managed specifically to develop quality grizzly habitat and security from human disturbance. This Plan also proposes to establish the Trail Creek Grizzly Bear Management Area in the North Fork. This area will serve as a National model for grizzly bear research and management. The Plan's emphasis on grizzly bear habitat also provides security for gray wolves. Bald eagle and peregrine falcon nesting sites would be protected through incorporation of management guidelines in all project activities.**

### 4. WILDLIFE DIVERSITY

The diversity of habitats necessary to support the array of native species appears to be adequate. Those groups sensitive to Forest management activities--the tree dependent group, old-growth dependent group, and riparian tree dependent group--are protected to the degree that the Flathead Wild and Scenic River corridor, Jewel Basin Hiking Area, Coram Experimental Forest, the Big Mountain Winter Sports Area, and the three wildernesses are protected.

In other areas of the Forest, habitat diversity is most significantly impacted by timber management activities. Current management direction would over time reduce the acres contributing old growth and riparian tree habitat from the existing situation. This Forest Plan would also result in reduction in acreage contributing these habitats; however, more acres of old growth and riparian tree habitat would be provided than under existing management direction.

## F. RANGE

With the exception of natural wet meadows throughout the Forest and natural grass areas in the Bob Marshall Wilderness, the rangeland on the Flathead National Forest is transitory. Forage production on transitory range depends on vegetative manipulation, such as logging and fire.

About 485,000 acres (39 percent) of the nonwilderness Forest are considered potentially suitable for management as grazing allotments for domestic livestock. Wilderness lands have only 357,000 acres (33 percent) which are potentially suitable.

Maximum transitory range forage production could theoretically support at most 12,000 AUM's of domestic livestock on nonwilderness lands. If this were adjusted to reflect transitory range that is or would be accessible and manageable, the Forest could support at most 4,120 AUM's of permitted livestock use.

Swan Lake and Tally Lake Ranger Districts provide nearly all of the domestic livestock grazing opportunities produced on nonwilderness lands. Generally, National Forest System land is an integral part of a much larger grazing unit involving State and private lands. Twenty allotments have been active within the last few years. The Forest's actual grazing during 1980 was 3,654 AUM's (nonwilderness), which is below the 3,850 AUM's that would be available annually under Current Direction if all existing allotments were fully used. The normal grazing use season runs from June through September, and most permittees have cow/calf operations.

The Flathead National Forest's transitory range has economic significance to the permittees, but considering the zone of influence to its entirety, the significance is more social and cultural than economic. The Forest supplies forage to support a small portion of the area's total domestic livestock.

Although local demand for Forest nonwilderness range can be expected to slowly increase in the next decade, the following factors will dampen increases: a relatively small local livestock industry, high transportation costs; and continuing declines in area cattle numbers as property values increase and ranches are subdivided into smaller parcels.

Wilderness forage is grazed by recreationists' stock, Government administrative stock, and wildlife. The amount of forage considered available for transportation stock is constrained by criteria that are designed to protect the wilderness resource. Existing levels of wilderness forage use are estimated to be the highest levels acceptable given these criteria. In fact some areas of the wildernesses are currently being over utilized, creating adverse impacts on the forage and wilderness resources. Other areas are being underused. Ideally use should be better distributed. Low levels of funding limit efforts to disperse use and improve visitor education.

The Flathead National Forest maximum potential for domestic livestock forage is estimated to support 11,000 AUM's of grazing use. The 1980 RPA target of 20,000 AUM's by the year 2030 is well above the Forest's maximum forage production capacity.

This Forest Plan provides a grazing program consistent with existing levels of use. Nonwilderness grazing allotments as provided currently would be maintained except on the Swan Lake District, where management concerns for winter range and grizzly bear management make about 100 potential AUM's unavailable in the upper Swan Valley.

A higher level of funding for wilderness management under this Forest Plan will allow wilderness packstock grazing to remain at existing levels. Overuse of forage in high use areas will be alleviated as stock traffic is better distributed through improved trail maintenance and visitor information.

## G. TIMBER

About 835,747 acres or 35 percent of the Flathead National Forest are tentatively suitable for producing commercial timber.* The existing mixture of timber on the Forest is composed of 18 percent lodgepole pine (tree stands with two-thirds or more of the volume lodgepole pine) and 82 percent mixed conifer stands.

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* The timber inventory data base used in this Forest planning process includes lands producing at least 20 cubic feet of timber per acre per year.

Since 1975 mountain pine beetle populations have been at epidemic levels, most severely impacting the lodgepole pine. The infestation is moving through susceptible stands across the Forest, and the epidemic is expected to subside by 1990 as susceptible lodgepole pine stands are killed or harvested. In 1979 the Forest implemented an aggressive program to harvest lodgepole pine to reduce losses in timber volume and stumpage values due to mountain pine beetle caused mortality. This program greatly increased the proportion of lodgepole pine in the Forest's timber harvest volumes as compared to pre-1978 timber harvest programs. This Plan continues to emphasize salvage of beetle infested lodgepole pine stands.

Historically, the majority of timber management activity has occurred on the less than 40 percent slopes. Of the total potentially suitable commercial timberland, 46 percent occurs on slopes of 40 percent or less, 27 percent on 40 to 60 percent slopes, and 27 percent on slopes exceeding 60 percent slope.

The concentration of harvesting on lower slopes in certain drainages, in combination with the aggressive lodgepole pine harvest program developed in response to the mountain pine beetle epidemic, has led to situations where the capability of watersheds to accept the increased sedimentation and water yield associated with timber harvest has been approached and in some cases met or exceeded current Flathead watershed management guidelines.

The 1969 Flathead Timber Management Plan, adjusted for land classification changes, projects an allowable timber harvest volume of 124 MMBF per year. The average annual volume sold since 1975 has been 116.2 MMBF per year. The quantity cut for the same 15-year period is 101 MMBF per year.

The Forest currently has about 475 MMBF of timber volume sold and under contract but uncut.* This level of uncut volume is higher than the historical average of about 200 MMBF. National economic conditions have led to this higher volume sold but uncut. This volume probably will be reduced during the next 3 years.

If timber harvest is maximized on all potentially suitable Forest acres, the biological production potential of the Forest is 171 MMBF for the first three decades with a long run sustained yield capacity of 201 MMBF. Normal production capacity of zone of influence sawmills producing at least 10 MMBF per year was determined in 1976 to be 687 MMBF, with about 322 MMBF of that capacity located in Flathead County.

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* See Appendix N for a summary of the timber sold and cut between the years 1961 and 1984.

In 1976 there was variation in the original ownership of sawtimber received by sawmills and plywood plants within the zone of influence. In Flathead County, about 65 percent of the total sawtimber received by area mills was harvested from National Forest System lands. Approximately 30 percent was harvested from private lands. On the other hand, in Lake and Missoula Counties only 18 percent of locally utilized sawtimber was of National Forest origin while 75 percent had been harvested on private lands.

Timber from the Flathead National Forest has historically been processed primarily in Flathead County, with smaller percentages utilized by mills in Missoula and Lake Counties. Approximately half the timber volume used by Flathead County mills has been harvested from Flathead National Forest lands. About one-fourth the volume used in Lake County and a much smaller percentage but higher volume of material processed in Missoula came from the Flathead National Forest.

The Forest's RPA timber harvest objectives could be met by continuing the management direction specified under Current Direction (see Table VI-5). The Forest Plan specifies a timber harvest volume of 100 MMBF for the first decade and a long run sustained yield capacity of 149 MMBF. Table VI-5 displays the timber harvest volumes and suitable land base that would exist on the Forest under Current Direction, the maximize timber production benchmark, and this Forest Plan. RPA objectives are also displayed.

TABLE VI-5 Timber Potential Base Harvest Schedule - Average Annual MMCF (MMBF in parentheses) - Flathead National Forest

| Decade | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Maximize Timber Benchmark | 42.8<br>(171) | 42.8<br>(171) | 42.8<br>(171) | 44.6<br>(178) | 47.5<br>(190) |
| Current Management Direction | 30.8<br>(132) | 30.8<br>(122) | 38.5<br>(167) | 38.5<br>(143) | 38.5<br>(161) |
| Forest Plan | 25.7<br>(100) | 25.7<br>(106) | 25.8<br>(111) | 31.0<br>(119) | 37.2<br>(152) |
| RPA Objectives | (119) | (120) | (135) | (149) | (167) |

## H. VEGETATIVE DIVERSITY

Flathead National Forest plant communities are naturally diverse. Most of the major vegetative habitat types common to western Montana are located on significant acreages of the Forest. The interaction of topographic and climatic variation is evidenced in the wide array of habitats, ranging from the warm dry ponderosa pine/bunchgrass type to the cool moist whitebark pine types. Nearly all tree species native to western Montana grow within the National Forest boundaries.

The commercial timber management program, which through harvest converts old growth timber stands to young stands, has had a significant impact on vegetative renewal. Even-aged regeneration (clearcut, shelterwood, and seed tree) systems have been used since the 1950's. A substantial portion of the old growth on the Forest has been harvested.

Sufficient old growth to provide habitat for viable populations of old growth dependent animal species remains throughout the Forest in areas where management objectives preclude timber harvest. Accelerated harvesting of even-aged lodgepole pine stands has the potential for increasing species mix. Existing diversity appears to be adequate to meet multiple-use resource management objectives.

Under this Forest Plan, management guidelines specifying vegetative management practices recognize the desirability of maintaining natural vegetative diversity on specific sites. Over the long term, the spatial distribution of tree species and age classes would increase over historic and existing situations.

## I. WATER

The Flathead National Forest provides approximately 7,000,000 acre-feet of water per year to the Columbia River drainage. Five major systems feed into the Flathead River drainage which eventually flows into the Columbia system. The chemical water quality of streams and rivers on the Forest is generally excellent. The water quality contaminant most commonly associated with land management is sediment. Compared to chemical characteristics, natural sediment is highly variable. This includes variability between watersheds and seasonally within a given watershed.

There are several community water supply watersheds located partially or totally on the Forest. Other noncommunity water supplies are obtained from wells, springs, or infiltration galleries that directly or indirectly receive water from National Forest System lands.

The Forest has developed ground water and surface water supplies furnishing potable water to 12 campgrounds and picnic areas and 17 administrative sites. A number of summer homes and outfitter camps also use National Forest streams for drinking water. Major uses of water on the Forest are detailed below:

| Source | Use | Number |
|---|---|---|
| Well | Administrative Sites | 9 |
| Stream | Administrative Sites | 8 |
| Well | Recreation Sites | 5 |
| Stream | Recreation Sites | 7 |
| Stream | Outfitter Camps | 58 |
| Stream | Summer Homes | 27 |
| Stream | Livestock | 25 |
| Wells & Streams | Other (resorts, fish hatchery, seed orchard, fire retardant plant) | 10 |

The Spotted Bear Ranger Station has a small hydropower facility. About 3 or 4 FERC applications to study the feasibility of commercial microhydro sites on the Forest are in various stages of processing.

Management activities on National Forest System lands have affected water quality in the nonwilderness watersheds through increases in water quantity and in sedimentation over natural levels. Timber harvest, associated road construction activities, and, to a lesser extent, livestock grazing have an effect on the water resource. In addition, localized heavy recreation use has had minor affects on water quality.

The majority of potential sediment produced by management activities can be controlled through specialized techniques in project design, unit layout, road construction, and maintenance, along with immediate stabilization efforts. Potentially damaging water yield and sediment load increases can be prevented through careful scheduling and location of timber harvest. Some degree of increase in sedimentation and water yield over natural is inevitable if ground-disturbing management activities are to occur.

In an effort to ensure that potential increases in water yield and sedimentation are acceptable and do not adversely impact uses of the Forest's water resource, "beneficial uses" of watersheds have been identified. The three categories are: public water supplies, fisheries, and other uses, including recreation and scenic values. Watersheds on the Forest have been grouped based on one or more of these beneficial uses.

Streams have also been evaluated as to their channel conditions, receiving ratings of "good," "fair," or "poor." These ratings relate to the stream's ability to absorb upstream ground disturbance without evidencing adverse impacts.

Watersheds used as community water supplies will be managed according to FSM 2543.12 "Requirements for Municipal Watersheds." Watersheds used as noncommunity water supplies will be managed with best management practices under the State water quality classification for the watershed.

Continuation of current management would not adversely affect wilderness watersheds but would result in adverse effects on a significant number of nonwilderness watersheds throughout the Forest.

Implementation of this Forest Plan will significantly decrease advance effects of Forest management activities on watersheds and will allow meeting all State water quality standards.

## J. MINERALS

Mineral resource management requires the Forest Service to conform to Congressional mandates to make minerals from NNational Forest System landavailable and at the same time to minimize the adverse effects of mining activities on surface resources.

Minerals management on National Forest System lands requires interagency coordination and cooperation. Although the Forest Service is responsible for the management of the surface resources, the BLM (Bureau of Land Management) in the Department of the Interior is primarily responsible for management of Federal minerals.

The dominant mineral activity on the Forest is oil and gas leasing. Over 1,000,000 acres were leased or under lease application in 1984. A Federal court ruling in 1985 caused the BLM to suspend those leases until litigation is completed. Before action is recommended on any lease application, additional site-specific analysis of environmental effects will be done.

Each lease, when issued, includes numerous standard and special stipulations to minimize effects of oil and gas activities on surface resources. In almost all instances, oil and gas exploration, development, and production can occur without causing unacceptable effects to soil, water, timber, range, scenic, wildlife, cultural, and recreation values.

In rare situations where the oil and gas activity and the surface management are incompatible, the Federal Government can decide which resource will be the dominant use. The Forest Service makes recommendations on these matters; the final decisions are made by the BLM.

Hard rock mining and exploration is under the authority of the 1872 General Mining Law, which entitles the miner to do all reasonable and necessary activity to explore for and develop mineral resources. Forest Service control of these activities is through its surface mining regulations.

Currently there are about 50 to 100 unpatented mining claims on the Flathead National Forest. There are no known active mining operations, nor has any "Notice of Intent" been submitted for approval. No commercial ore deposits are known to exist on the Flathead National Forest. Since no commercial site deposits of hard rock minerals have been discovered on the Flathead National Forest over the last 70 years, it is anticipated that no mines will be developed in the immediate future.

Common variety minerals, such as gravel and common rock deposits, are extensively utilized for State, County, and Forest Service road construction and maintenance. About four mineral material permits (no charge) are issued to State and County agencies each year. The Forest Service uses about 12,000 tons of this type of material each year. No attempt has been made to estimate a dollar value for these materials.

Federal statute permits withdrawal of areas from appropriation, entry, or use for mining in order to protect certain surface resource values or Government improvements. About 38,800 acres of the Flathead National Forest are currently withdrawn. Congress withdrew 24,520 acres of that area by classifying portions of South and Middle Forks of the Flathead River as components of the National Wild and Scenic Rivers System. The remaining 13,265 acres were withdrawn to protect the Coram Experimental Forest and various other administrative and recreation sites. All of these withdrawals will be reviewed within 8 years for possible termination. The current policy is to terminate most of these kinds of withdrawals since the Forest Service's 1974 surface mining regulations protect Government improvements and special surface resources.

Current management direction established through the Unit Plans and District Multiple-Use Plans would result in a relatively unrestricted minerals management program. The management direction of this Forest Plan requires more special lease stipulations to protect sensitive areas and surface resources from possible adverse surface disturbances associated with mineral development. Acres impacted by special stipulations under Current Direction and under this Forest Plan are summarized in Table VI-6.

## K. LANDS

Within the exterior boundaries of the Flathead National Forest, there are 278,740 acres of non-National Forest ownership. Major owners of these inholdings are Plum Creek Timber Company, Inc., State of Montana (mostly school trust lands), and Champion International. A major checkerboard landownership pattern exists in the upper Swan Valley with Plum Creek Timber Company, Inc., and the State of Montana. Widespread subdivisions for recreation and rural residential use over the past decade has resulted in thousands of other small landownerships.

Landownership adjustment has been accomplished in compliance with a 1967 Comprehensive Land Adjustment Plan. This document emphasizes landownership consolidation without fully weighing other resource management objectives, such as big-game winter range, maintenance of riparian areas, and threatened and endangered species. The goal of the current land exchange program is to complete about 2,200 acres of landownership adjustments per year that accomplish resource management objectives.

Under this Forest Plan, the land adjustment program will comply with landownership adjustment guidelines.

TABLE VI-6 Acres Impacted by Special Stipulations and Controls - Oil and Gas Leases - Flathead National Forest

| Oil and Gas | Current Management Direction | Forest Plan |
|---|---|---|
| Category A* | 1,096,277 | 1,172,800 |
| Category B | 76,634 | 150,100 |
| Category C | 1,179,578 | 1,007,500 |
| Category D | 0 | 0 |

| | |
|---|---|
| Category A: | In this category, surface and subsurface resource conflicts are resolved through mineral withdrawal - existing or proposed. |
| Category B: | In this category, certain surface resources are protected by Statute, Executive Orders, or mitigation measures. |
| Category C: | In this category, the Regional Forester has specified certain protective stipulations to protect special surface values. |
| Category D: | These are lands where no special stipulations other than the normal standard stipulations. There are no Category D lands on the Flathead National Forest. |

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* All designated wildernesses were permanently withdrawn on December 31, 1983, by the Wilderness Act, from all forms of mineral activity. This wilderness acreage includes 22,162 acres of "wild" river area withdrawn by Congress. The interior portions of Jewel Basin, totaling 3,200 acres, which cannot be accessed without surface occupancy and which cannot be accessed through directional drilling from outside of Jewel Basin will be withdrawn from oil and gas leasing. The remainder of Jewel Basin is listed in Category C.

Emphasis would be given to acquisition of land and interests in land to allow full road and trail access to all National Forest recreation areas and commercial timberland areas. Efforts will be made to acquire stream access sites along the Flathead Wild and Scenic River and trailhead access into the Mission Mountains Wilderness. Emphasis will also be given for acquisition in special wildlife management areas, riparian habitat, recreation areas, and endangered species habitat. Whenever possible land exchanges will trade like lands (timberland for timberland). The objecitve is to maintain the current level of suitable forest land in order to maintain a stable timber supply for local mills. Special emphasis would be given to continue the Land and Water Conservation Fund land acquisition program on the Flathead Wild and Scenic River.

## L. ROADS

As of 1980 there were 3,146 miles of existing road on the Forest, including approximately 222 miles of arterial roads, 813 miles of collector roads, and 2,111 miles of local roads. Local roads include 320 miles of primitive roads which are identified during area transportation planning efforts either for retention on the system of roads or for obliteration.

The Forest,s arterial road system is 100 percent complete, while the collector road system is about 95 percent complete. The existing local roads system, if Current Direction were maintained, would be about 40 percent complete. The majority of roads yet to be built are local roads providing direct, final linkage to the timber resource.

Historically, road management programs have been developed and implemented by the Ranger District administrative levels leading to road management policies that varied from one District to another. No Forest-wide policy or direction existed. In 1982, the Forest Supervisor implemented the Forest Travel Planning Policy and Procedures. This policy provides for synchronizing the Forest Access Map with the Forest Plan. The basic policy is to provide the greatest possible level of public access while promoting public safety, protecting resources, and minimizing user conflicts commensurate with the Forest Plan.

Table VI-7 compares the road requirements and road management program of this Forest Plan to that which would occur under Current Direction. The greatest possible level of public access commensurate with promoting public safety, protecting resources, and minimizing user conflicts would be provided. This Forest Plan will require fewer total roads at full development and will implement a more restrictive road management program primarily due to the need for increased wildlife security (see road management objectives and standards in Chapter II).

**TABLE VI-7** Roads, Existing, and To Be Constructed - Flathead National Forest

| Roads | Current Management Direction | Forest Plan |
|---|---|---|
| Existing Miles | 3,146 | 3,146 |
| To Be Constructed | 3,455 | 2,441 |
| Miles To Be Built by Decade (Average Annual) | | |
| Decade 1 | 67.2 | 50.8 |
| 2 | 62.5 | 37.3 |
| 3 | 84.8 | 29.6 |
| 4 | 89.6 | 72.4 |
| 5 | 21.1 | 54.0 |
| Five-Decade Total | 3252 | 2441 |
| Average Road Density at Full Development* | 3.4 | 3.0 |
| Desired Open Road Density** | 2.8 | 1.3 |

* Road density in miles per square mile based on 1961 square miles outside wilderness designations and total miles of road for full level development.

** Maximum density of roads open for use without restrictions during summer season. Density calculations are based on 1,961 square miles outside wilderness designations.

NOTE: Average miles of road reconstruction per decade for the first five decades is 170, for Decades 6-15, 50.

## M. PROTECTION

The Flathead National Forest's vegetation reflects the ongoing impacts of fire. The greatest number of acres were burned in 1910, 1926, and 1929, resulting in the existing acreages of 50- to 70-year old lodgepole pine. Fire reports indicate the Forest experiences about 75 fires per year, the majority caused by lightning.

Lodgepole pine killed by mountain pine beetle and still standing on the Forest will create a major fuel buildup over the next few years as the trees decay and fall.

The incidence of person-caused fires has grown slightly in recent years. Increased recreational activities anticipated in the future as well as accelerated residential development of intermingled private lands has the potential for increasing the number of person-caused fires.

In 1980 the number of timbered Flathead National Forest acres affected by the mountain pine beetle increased to about 315,000--a 260 percent increase since 1979. The greatest concentration continues to be on the Glacier View and Tally Lake Ranger Districts. A resurgence of the mountain pine beetle occurred in 1984 and 1985 and is expected to continue through the 1980's. That resurgence is occurring on the Tally Lake Ranger District and the "Island" unit of the Swan Lake Ranger District.

The tabulation below shows the maximum potential loss due to mountain pine beetle given no timber harvest:

Potential Loss Due to Mountain Pine Beetle
Average MMBF Per Year

| | DECADE | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| High Productivity lodgepole pine stands | 2.9 | 12.5 | 15.1 | 23.1 | 11.7 |
| Low Productivity lodgepole pine stands | 2.9 | 1.0 | 2.5 | 7.8 | 14.3 |
| Forest Total | 5.8 | 13.5 | 17.6 | 30.9 | 26.0 |

If stands were allowed to grow and die unmanaged over a 50-year period, this would represent a total potential loss of 938 MMBF, or an average annual loss of 19 MMBF.

The Flathead National Forest management objective has been to salvage extensive amounts of lodgepole pine before serious losses occur. Not all beetle-killed lodgepole pine can be utilized because of other resource values. This objective is retained under this Forest Plan.

Spruce bark beetle activity was recently noted in three drainages of the North Fork and in the Middle Fork of the Flathead River. Conditions fostering the current buildup originated several years ago in scattered spruce blowdown. The spruce bark beetle affects mature spruce trees. Not many extensive spruce stands remain due to previous harvests. Much of the remaining spruce cannot be harvested due to lack of access and other resource constraints.

Other Forest insects and diseases are presently at endemic population levels and are manageable.

# VII. Glossary

**ACCESS** See Public Access.

**ACRE-EQUIVALENT** A unit of habitat output related to fish or wildlife habitat improvement projects. Acre equivalents are based on the number of acres of habitat that are influenced by one habitat acre actually modified by the habitat improvement project.

**ACRE-FOOT** A measure of water or sediment volume equal to the amount which would cover an area of 1 acre to a depth of 1 foot (325,851 gallons or 43,560 cubic feet).

**ACTIVITY** A measure, course of action, or treatment that is undertaken to directly or indirectly produce, enhance, or maintain forest and rangeland outputs or achieve administrative or environmental quality objectives.

**ACTIVITY FUELS** Debris generated by a Forest activity that increases fire potential such a firewood gathering, precommnercial thinning, timber harvesting, and road construction.

**ACTIVITY TYPE** The further description of the actions, measures, or treatments within an activity.

**ADFLUVIAL** Freshwater fish that migrate from freshwater lakes to freshwater streams to spawn.

**ADMINISTRATIVE FACILITIES** Those facilities, such as Ranger Stations, work centers, and cabins which are used by the Forest Service in the management of the National Forest.

**AIRSHED** Basic geographic units in which air quality is managed.

**AFFECTED ENVIRONMENT** The biological and physical environment that will or may be changed by actions proposed and the relationship of people to that environment.

**ALLOTMENT** See Range Allotment.

**ALLOWABLE SALE QUANTITY** The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the "average annual allowable sale quantity."

**ALTERNATIVE** A combination of management prescriptions applied in specific amounts and locations to achieve a desired management emphasis as expressed in goals and objectives. One of several policies, plans, or projects proposed for decisionmaking. An alternative need not substitute for another in all respects.

**ALTERNATIVE MANAGEMENT DIRECTION STATEMENT** A descriptive paragraph that defines the management theme that guides land designations, management activities, and programs.

**ALTERNATIVE, NO ACTION** An alternative that maintains established trends or management direction.

**AMENTITY VALUES** Resource use for which market values (or proxy values) are not or cannot be established.

**ANADROMOUS FISH** Fish which spend much of their adult life in the ocean, returning to inland waters to spawn; e.g., salmon, steelhead.

**ANALYSIS AREA** One or more capability areas combined for the purpose of analysis in formulating alternatives and estimating various impacts and effects.

**ANALYSIS OF THE MANAGEMENT SITUATION** A determination of the ability of the planning area to supply goods and services in response to society's demand for those goods and services.

**ANALYSIS PERIOD, LONG TERM** A time horizon of expenditures in an analysis that is two or more 5-Year RPA planning periods in duration. RPA, program, Regional Guide, and Forest Plan analyses have long-term periods.

**ANALYSIS PERIOD, SHORT TERM** A time horizon of expenditures in an analysis that is only several years in duration. A budget analysis is short-term.

**ANIMAL UNIT MONTH (AUM)** The quantity of forage required by the equivalent of a 1000 lb. mature cow for 1 month.

**ANNUAL FOREST PROGRAM** The summary or aggregation of all projects for a given year that, for a given level of funding, make up an integrated (multi-functional) course of action on a Forest planning area.

**AQUATIC ECOSYSTEM** A stream channel, lake or estuary bed, the water itself, and the biotic communities that occur therein.

**ARTERIAL ROADS** Roads comprising the basic access network for National Forest System administrative and management activities. These roads serve all resources to a substantial extent, and maintenance is not normally determined by the activities of any one resource. They provide service to large land areas and usually connect with public highways or other Forest arterial roads to form an integrated network of primary travel routes. The location and standards are often determined by a demand for maximum mobility and travel efficiency rather than by a specific resource management service. Usually they are developed and operated for long-term land and resource management purposes and constant service.

**ASSESSMENT** The Renewable Resource Assessment required by the Resource Planning Act (see Renewable Resource Assessment).

**ASSET, CAPITAL** A natural resource, manmade structure, facility, or improvement in natural resources used as an input in production processes.

**ASSET, RESIDUAL** The remaining value of a capital asset at the end of the time horizon of the planning or analytical process.

**AVAILABLE FOREST LAND** Land that has not been legislatively or administratively withdrawn from timber production by the Secretary of Agriculture or Forest Service Chief.

**AUM** See Animal Unit Month.

**AVERAGE ANNUAL CUT** The volume of timber harvested in a decade, divided by 10.

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**BASE SALE SCHEDULE (Base Timber Harvest Schedule)** A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest is not greater than the long-term sustained yield capacity.

**BENCHMARK** Reference points that define the bounds within which feasible management alternatives can be developed. Benchmarks may be defined by resource output or economic measures.

**BENEFIT-COST RATIO** Measure of economic efficiency, computed by dividing total discounted primary benefits by total discounted economic costs.

**BENEFIT, DIRECT** A primary benefit that fulfills specified objectives of the policy, program, or project.

**BENEFIT, INDUCED** A primary benefit from an output that is incidental to the objectives of the policy, program, or project.

**BENEFIT, PRIMARY** A benefit accruing to resource owners from a primary output, which may be direct or induced, or a residual asset. Primary benefits are components of net public benefits.

**BENEFIT, SUMMARY** A benefit accruing to parties other than the resource owners, including effects on local, regional, and National economies and on consumers of outputs. Secondary benefits are not necessarily included in net public benefits.

**BENEFIT (VALUE)** Inclusive terms to quantify the results of a proposed activity, project, or program expressed in monetary or nonmonetary terms.

**BEST MANAGEMENT PRACTICES (BMP)** The set of practices in the Forest Plan which, when applied during implementation of a project, ensures that water related benefical uses are protected and that State water quality standards are met. BMP's can take several forms. Some are defined by State regulation or memoranda of understanding between the Forest Service and the States. Best Management Practices for the Flathead River drainage are defined in Appendix A of the Flathead Drainage 208 Project (Appendix HH of the Forest Plan). Others are defined by the Forest interdisciplinary planning team for Forest-wide application. Both of these kinds of BMP's are included in the Forest Plan as Forest-wide standards. A third kind are identified by the interdisciplinary team for application to specific Management Areas; these are included as Management Area Standards in the appropriate management areas. A fourth kind, project level BMP's, are based on site specific evaluation and represent the most effective and practicable means of accomplishing the water quality and other goals of the specfic area involved in the project. These project level BMP's can either supplement or replace the Forest Plan standards for specific projects.

**BIG GAME** Those species of large mammals normally managed as a sport hunting resource.

**BIG-GAME SUMMER RANGE** Land used by big game during the summer months.

**BIG-GAME WINTER RANGE** The area available to and used by big game through the winter season.

**BIOLOGICAL POTENTIAL** The maximum possible output of a given resource limited only by its inherent physical and biological characteristics.

**BIOLOGICAL GROWTH POTENTIAL** The average net growth attainable in a fully stocked natural forest stand.

**BOARD FOOT** A unit of measurement represented by a board one foot square and one inch thick.

**BROADCAST BURN** Allowing a controlled fire to burn over a designated area within well-defined boundaries for reduction of fuel hazard, as a silvicultural treatment, or both.

**BOARD FOOT/CUBIC FOOT CONVERSION** The mathematical ratio of the board feet contained in one cubic foot of timber. This ratio varies with tree species, diameter, height, and form factors.

**BROWSE** Twigs, leaves, and young shoots of trees and shrubs on which animals feed; in particular, those shrubs which are utilized by big-game animals for food.

**CANOPY** The more or less continuous cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth.

**CAPABILITY** The potential of an area of land and or water to produce resources, supply goods and services, and allow resource uses under a specified set of management practices and at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils, and geology, as well as the application of management practices such as silviculture or protection from fires, insects, and disease.

**CAPABILITY AREA** A geographic delineation used to describe characteristics of the land and resources in integrated Forest planning. Capability areas may be synonmous with ecological land units, ecosystems, or land response units.

**CAPITAL INVESTMENT** Investment in facilities such as roads and structures with specially appropriated funds.

**CARRYING CAPACITY** 1 (recreation): the amount of recreation use an area can sustain without deterioration of site quality; 2 (wildlife): the maximum number of animals an area can support during a given period of the year; and 3 (range): the maximum stocking rate possible without damaging the vegetation or related resources. Carrying capacity may vary from year to year on the same area due to fluctuating forage production.

**CAVITY** A hollow in a tree that is used by birds or mammals for roosting and reproduction.

**CEQ** See Council of Environmental Quality.

**CFR** Code of Federal Regulations.

**CHARGEABLE VOLUME** Chargeable volume is all volume that is included in the growth and yield projections for the selected management prescriptions used to arrive at the "allowable sale quantity," based on Regional utilization standards.

**CLEARCUTTING** Harvesting of all trees in one cut. It prepares the area for a new, even-aged stand. The area harvested may be a patch, stand, or strip large enough to be mapped or recorded as separate age class in planning. Regeneration is obtained through natural seeding or through planting or direct seeding.

**CLIMAX PLANT COMMUNITY** The final or stable biotic community in a developmental series.

**CLOSURE** The administrative order that does not allow specified uses in designated areas or on Forest development roads or trails.

**CMAI** See Culmination of Mean Annual Increment.

**COEFFICIENT (COST, VALUE, YIELD)** The numeric units used to include costs, values, and outputs in the analysis model used in the formulation of the Forest Plan.

**COLLECTOR ROADS** Roads constructed to serve two or more elements but which do not fit into the other two road categories (arterial or local). Construction costs of these facilities are prorated to the respective element served. These roads serve smaller land areas and are usually connected to a Forest arterial or public highway. They collect traffic from local Forest roads or terminal facilities. The location and standard are influenced by both long-term multi-resource service needs and travel efficiency. Forest collector roads are operated for constant or intermittent service, depending on land use and resource management objectives for the area served by the facility.

**COMMERICAL FOREST LAND (SUITABLE TIMBERLAND)** Land that is producing, or is capable of producing, crops of industrial wood and (1) has not been withdrawn by Congress, the Secretary of Agriculture, or the Chief of the Forest Service; (2) where existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity or watershed conditions; and (3) where existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be obtained within years after final harvesting.

**COMMERCIAL TIMBER SALES** The selling of timber from National Forest System lands for the economic gain of the party removing and marketing the trees.

**COMMODITIES** Resources with commercial value; all resource products which are articles of commerce, such as timber, range forage, and minerals.

**COMMON MATERIALS** See Minerals, Common Variety.

**COMMUNITY COHESION** The degree of unity and cooperation within a community in working toward shared goals and solutions to problems.

**COMMUNITY STABILITY** The capacity of a community to absorb and cope with change without major hardship to institutions or groups within the community.

**CONCERN** See Management Concern.

**CONDITION CLASS** A descriptive category of the existing tree vegetation as it relates to size, stocking, and age.

**CONFINE** (Confine a Fire). To restrict the fire within determined boundaries established either prior to the fire, during the fire, or in an escaped fire situation analysis. Surveillance may be appropriate when the fire will be self-confined with a defined perimeter.

**CONGRESSIONALLY DESIGNATED AREAS** Areas established by Congressional legislation, such as National Wildernesses, National Wild and Scenic Rivers, and National Recreation Areas.

**CONSTRAINT** A confinement or restriction on the range of permissible choices.

**CONSUMPTIVE USES** Uses of a resource that reduce the supply. Examples of some consumptive uses of water are irrigation, domestic and industrial water use, grazing, and timber harvest.

**CONTAIN** (Contain a Fire). To surround a fire and any spot fires with control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions.

**CONTINENTAL DIVIDE** The drainage divide between waters flowing to the Atlantic Ocean and the Pacific Ocean.

**CONTROL** (Control a Fire). To complete the control line around a fire, any spot fires, and any interior islands to be saved; burn out any unburned area adjacent to the fire side of the control line; and cool down all hot spots that are immediate threats to the control line, until the line can reasonably be expected to hold under forseeable conditions.

**CORD** A unit of gross volume measurement for stacked roundwood based on external dimensions, generally implies a stack of 4 feet by 4 feet vertical cross section and 8 feet long, contains 128 stacked cubic feet.

**CORDUROY** A method of subgrade reinforcement often used on trails and for some roads whereby logs are placed perpendicular to the traveled way to support a surfacing material.

**CORRIDOR (UTILITY CORRIDOR)** A linear strip of land which has ecological, technical, economic, social, or similar advantages over other areas for the present or future location of transportation or utility routes.

**COST** The negative or adverse effects or expenditures resulting from an action. Costs may be monetary, social, physical or environmental in nature.

**COST EFFICIENCY** The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specific levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates of return may be appropriate.

**COST-SHARE** Refers to the process of cooperating in the joint development of a road system. The document executed through this process, called "Road Right-of-Way Construction and Use Agreement," specifies the terms of developing the transportation system for a specified land area.

**COUNCIL ON ENVIRONMENTAL QUALITY** An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews Federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

**COVER/FORAGE RATIO** The ratio of tree cover (usually conifer types) to foraging areas (natural openings, clearcuts, etc.)

**CRITICAL HABITAT** Specific areas within the geographical area occupied by the species on which are found those physical and biological features (1) essential to the conservation of the species, and (2) which may require special management considerations or protection. Critical habitat shall not include the entire geographic area which can be occupied by the threatened and endangered species.

**CUBIC FOOT** The amount of wood volume equivalent to a cube 1 foot by 1 foot by 1 foot.

**CULMINATION OF MEAN ANNUAL INCREMENT (CMAI)** The point at which the volume increment for a tree or stand of trees has achieved it's highest mean value. Mean annual increment is based on expected growth according to the management intensities and utilization standards assumed in the Forest Plan. The CMAI is calculated by dividing the attained growth (volume) by it's corresponding age.

**CULTURAL RESOURCES** The physical remains of human activity (artifacts, ruins, burial mounds, petroglyphs, etc.) and conceptual content or context (as a setting for legendary, historic, or prehistoric events, as a sacred area of native peoples, etc.) of an area of prehistoric or historic occupation.

**CUTTING CYCLE** For a crop or stand, the planned interval of time between the beginning of one cutting period and the beginning of the suceeding cutting period.

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**DEFICIT TIMBER SALE** A timber sale that has an appraised value that would produce less than a standard profit and risk margin for an average operator as estimated by the Forest Service appraisal system.

**DEMAND** The amount of output that users are willing to take at a specific price, time period, and conditions of sale.

**DEMAND ANALYSIS** A study of the factors affecting the schedule of demand for a good or service, including the price-quantity relationship, if applicable.

**DEPARTURE** A schedule which deviates from the principle of nondeclining flow by exhibiting a planned decrease in the timber sale and harvest schedule at any time in the future.

**DEPENDENT COMMUNITIES** Communities whose social, economic, or political life would become discernably different in important respects if market or nonmarket outputs from the National Forests were cut off.

**DEVELOPED RECREATION** Recreation that occurs where improvements enhance recreation opportunities and accommodate intensive recreation activities in a defined area.

**DEVELOPED RECREATION SITES** Relatively small, distinctly defined area where facilities are provided for concentrated public use, i.e., campgrounds, picnic areas, and swimming areas.

**DIAMETER BREAST HEIGHT (DBH)** The diameter of a tree measured 4-1/2 feet above the ground.

**DIRECT EFFECTS** Effects on the environment which occur at the same time and place as the initial cause or action.

**DISCOUNT RATE** An interest rate that reflects the cost or time value of money. It is used in discounting future costs and benefits.

**DISCOUNTING** An economic adjustment for the time value of money; mathematical reduction of costs and/or benefits which occur in the future to the present time for purposes of comparison.

**DISPERSED RECREATION** That portion of outdoor recreation use which occurs outside of developed sites in the unroaded and roaded Forest environment; i.e., hunting, backpacking, and berrypicking.

**DISTRICT RANGER** The official responsible for administering the National Forest System lands on a Ranger District.

**DIVERSITY** The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

**DRAFT ENVIRONMENTAL IMPACT STATEMENT** See Environmental Impact Statement, draft.

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**ECONOMICS** The study of how limited resources, goods, and services are allocated among competing uses.

**ECOSYSTEM** A complete, interacting system of organisms considered together with their environment; i.e., a marsh, watershed, or lake.

**ECOTONE** A transition or junction zone between two or more diverse communities (ecosystems).

**EDAPHIC** The influence of soils on living organisms, particularly plants, including man's use of the land for plant growth.

**EFFECTS** Physical, biological, social, and economic results (expected or experienced) resulting from achievement of outputs. Effects can be direct, indirect, and cumulative.

**EFFICIENCY, ECONOMIC** The usefulness of inputs (costs) to produce outputs (benefits) and effects when all costs and benefits that can be identified and valued are included in the computations. Economic efficiency is usually measured using present net value, though use of benefit-cost ratios and rates-of-return may sometimes be appropriate.

**ELK HIDING COVER** Vegetation, primarily trees, capable of hiding 90% of an elk seen from a distance of 200 feet or less.

**ELK SECURITY COVER (EFFECTIVE ELK SECURITY COVER)** Elk hiding cover modified by open roads. The greater the density of open roads within an area, the less effective is the hiding cover in providing security for elk.

**ENDANGERED SPECIES** Any species, plant or animal, which is in danger of extinction throughout all or a significant portion of its range. Endangered species are identified by the Secretary of the Interior in accordance with the 1973 Endangered Species Act.

**ENDING INVENTORY CONSTRAINT (EIC)** Constraint to ensure that the total timber volume left at the end of the planning horizon will equal or exceed the volume that would occur in a managed Forest.

**ENVIRONMENTAL ANALYSIS** An analysis of alternative actions and their predictable short- and long-term environmental effects which include physical, biological, economic, social, and environmental design factors and their interactions.

**ENVIRONMENTAL ASSESSMENT** A concise public document for which a Federal agency is responsible that serves to: (1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; (2) Aid an agency's compliance with the National Environmental Policy Act when no environmental impact statement is necessary; and (3) Facilitate preparation of an environmental impact statement when one is necessary.

**ENVIRONMENTAL IMPACT STATEMENT, DRAFT (DEIS)** A detailed written statement as required by Sec. 102(2)(C) of the National Environmental Policy Act.

**ENVIRONMENTAL IMPACT STATEMENT, FINAL (FEIS)** The final version of the public document required by NEPA (see above).

**EPHEMERAL STREAMS** Streams that flow only as a direct response to rainfall or snowmelt events. They have no baseflow.

**EROSION** The group of processes whereby earthy or rocky material is worn away by natural sources such as wind, water, or ice and removed from any part of the earth's surface.

**ESCAPEMENT** The number of adult anadromous fish escaping past commercial and recreational harvest fisheries and other sources of mortality to upstream spawning areas.

**EVEN-AGED MANAGEMENT** The application of a combination of actions that result in the creation of stands in which trees of essentially the same age grow together. Managed even-aged Forests are characterized by a distribution of the stands of varying ages (and, therefore, tree sizes) throughout the Forest area. The difference in ages between trees forming the main canopy level of the stand does not usually exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Cutting methods include clearcutting, shelterwood cutting, and seed tree cutting.

**EXPERIENCE LEVELS** A concept used in recreation management to delineate the range of opportunities for satisfying basic recreation needs of people. A scale of five experience levels ranging from "primitive" to "highly developed" is planned for the National Forest System.

**EXTRACTIVE USE** Use of natural resources that removes them from their natural setting.

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**FAMILY UNIT** A camp or picnic spot with table, fireplace, tent pad, and parking spot.

**FEE SITE** A Forest Service recreation area in which users must pay a fee. Fee sites must meet certain standards and provide certain facilities as specified in the Forest Service Manual.

**FINAL CUT** Removal of the last seed bearers or shelter trees after regeneration is considered to be established under a shelterwood system.

**FLOOD PLAIN** The lowland and relatively flat area adjoining inland waters, including at a minimum, that area subject to a 1 percent or greater chance of flooding in any given year.

**FORAGE** All browse and nonwoody plants available to livestock or wildlife for feed.

**FORB** Any herbaceous plant other than true grasses, sedges, or rushes.

**FOREST AND RANGELAND RENEWABLE RESOURCES PLANNING ACT OF 1974** An act of Congress which requires the assessment of the Nation's renewable resources and the periodic development of a national renewable resources program. It also requires the development, maintenance, and, as appropriate, revision of land and resource management plans for units of the National Forest System (e.g. National Forest).

**FOREST LAND** Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for nonforest use. Lands developed for nonforest use include areas for crops, improved pasture, residential, or administrative areas, improved constructed roads of any width, and adjoining road clearing and powerline clearing of any width.

The term "occupied" when used to define forest land, will be measured by canopy cover of live forest trees at maturity. The minimum area for classification of forest land will be 1 acre or greater. Unimproved roads, trails, stream and clearings in forest areas are classified as forest if they are less than 120 feet in width.

**FOREST LOCAL ROADS** Roads constructed and maintained for, and frequented by, the activities of a given resource element. Some uses may be made by other element activities, but normally maintenance is not affected by such use. These roads connect terminal facilities with Forest collector or Forest arterial roads or public highways. The location and standard are usually determined by the requirement of a specific resource activity rather than by travel efficiency. Forest local roads may be developed and operated for constant or intermittent service, depending on land use and resource management objectives for the area served by the facility.

**FOREST SUPERVISOR** The official responsible for administering the National Forest System lands in a Forest Service Administrative Unit, which may consist of one or more National Forests or all the Forests within a State.

**FOREST SYSTEM ROAD** A road wholly or partly within or adjacent to and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and developments of its resources.

**FORPLAN** A linear programing system used for developing and analyzing Forest planning alternatives.

**FOREST-WIDE MANAGEMENT GUIDELINES** An indication or outline of policy or conduct dealing with the basic management of the Forest. Forest-wide management guidelines apply to all areas of the Forest regardless of the other management prescriptions applied.

**FSH** Forest Service Handbook.

**FSM** Forest Service Manual.

**FUEL BREAK** A zone in which fuel quantity has been reduced or altered to provide a position for suppression forces to make a stand against wildfire. Fuel breaks are designated or constructed before the outbreak of a fire. Fuel breaks may consist of one or a combination of the following: Natural barriers, constructed fuelbreaks, manmade barriers.

**FUELS** Include living plants; dead, woody vegetative materials; and other vegetative materials which are capable of burning.

**FUELS MANAGEMENT** Manipulation or reduction of fuels to meet Forest protection and management objectives while preserving and enhancing environmental quality.

**FUELS TREATMENT** The rearrangement or disposal of natural or activity fuels to reduce the fire hazard.

**FULL-SERVICE MANAGEMENT** The administration, operation, and maintenance of developed recreation sites to established standards with the objective to provide a pleasant recreation experience for the visitor and exceed the minimum health and safety needs of the visitors.

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**GAME SPECIES** Any species of wildlife or fish for which seasons and bag limits have been prescribed and which are normally harvested by hunters, trappers, and fisherman under State or Federal laws, codes, and regulations.

**GEOGRAPHIC UNIT** Specific areas of the Forest containing common physical, biological, and/or social characteristics. These units were determined by the Districts as manageable boundaries to work with.

**GOAL** A concise statement that describes a desired condition to be achieved. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.

**GOODS AND SERVICES** The various outputs, including onsite uses, produced by forest and rangeland renewable resources.

**GRAZING ALLOTMENT** See Range Allotment.

**GROUP SELECTION CUTTING** A cutting method to develop and maintain uneven-aged stands by the removal of small groups of trees to meet a predetermined goal of size distribution and species composition in remaining stands.

**GROWING STOCK LEVEL** A relative stand density measure used to guide a management objective such as maximizing timber volume yields or optimizing big-game thermal cover.

**GUIDELINE** See Standard and Guideline.

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**HABITAT** The place where a organism lives, including the entire range of environmental conditions required for its survival.

**HABITAT COMPONENT** One segment of the range of environmental conditions of an organism's habitat. An avalanche path is a habitat component of a grizzly bear's habitat.

**HABITAT TYPE** An aggregation of all land areas potentially capable of producing similar plant communities at climax.

**HABITAT TYPE GROUP** A logical grouping of habitat types to facilitate resource planning and public presentations.

**HIDING COVER** Trees of sufficient size and density to conceal animals from view at 200 feet.

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**IMPACT ANALYSIS AREA** The delineated area subject to significant economic and social impacts from Forest Service activities included in an economic or social impact analysis.

**IMPROVEMENT CUTTING** Removing trees of undesirable species, form, or condition from the main canopy in stands past the sapling stage to improve the composition and quality.

**INDICATOR SPECIES** Species identified in a planning process that are used to monitor the effects of planned management activities on viable populations of wildlife and fish, including those that are socially or economically important.

**INDIRECT EFFECTS** Secondary effects which occur in locations other than the initial action or significantly later in time.

**INDIVIDUAL TREE SELECTION HARVEST** A cutting method to develop and maintain uneven-age stands by the removal of selected trees from specified age classes over the entire stand area in order to meet a predetermined goal of age distribution and species in the remaining stand.

**INDUSTRIAL WOOD** All commercial roundwood products except fuelwood.

**INSTREAM FLOWS** The minmum water volume (cubic feet per second) in each stream necessary to meet seasonal streamflow requirements for maintaining aquatic ecosystems, visual quality, recreational opportunities, and other uses.

**IN-MIGRATION** The movement of human population into an area.

**INTEGRATED PEST MANAGEMENT** A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategy includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable.

**INTENSIVE GRAZING** Grazing management that controls distribution of cattle and duration of use on the range, usually by fences, so parts of the range are rested during the growing season.

**INTER-DISCIPLINARY TEAM (ID TEAM)** A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem. Through interaction, participants bring different points of view to bear on the problem.

**INTERMEDIATE HARVEST** Any removal of trees from a stand between the time of its formation and the regeneration cut. Most commonly applied intermediate cuttings are release, thinning, improvement, and salvage.

**INTERMITTENT STREAM** A stream which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow.

**INTERPRETATIVE SERVICES** Visitor information services designed to inform and educate Forest visitors improving their understanding, appreciation, and enjoyment of National Forest resources.

**INVENTORY DATA** Recorded measurements, facts, evidence, or observations on Forest resources such as soil, water, timber, wildlife, range, geology, minerals, and recreation which was used to determine the capability and opportunity of the Forest to be managed for those resources.

**ISSUE** See Public Issue.

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**"KEY REACHES" OF WATERSHED SYSTEM** A representative stream segment that can be expected to be sensitive to water resource changes and which adequately reflects the effects of management of the stream channel, the water, and their beneficial uses.

**KEY SUMMER RANGE** An area that is potentially capable of supporting big game during the summer use period.

**KEY WINTER RANGE** The portion of the yearlong range where big game find food and/or RANGE cover during severe winter weather.

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**LAND EXCHANGE** The conveyance of non-Federal land or interests to the United States in exchange for National Forest System land or interests in land.

**LANDLINE LOCATION** The legal identification, accurate location, and description of property boundaries.

**LANDTYPE** An inventory map unit with relatively uniform potential for a defined set of land uses. Properties of soils, landform, natural vegetation, and bedrock are commonly components of landtype delineation used to evaluate potentials and limitations for land use.

**LANDTYPE GROUP** A logical grouping of landtypes that facilitate resource planning.

**LEASABLE MINERALS** See Minerals, Leasable.

**LEVEL I FIRE ANALYSIS** General fire management analysis to provide historical information that assists the interdisciplinary team in the analysis of the management situation and formulation of alternatives for the Forest Plan.

**LEVEL II FIRE ANALYSIS** An analytical process which guides the implementation of fire management activities of the Forest Plan.

**LINEAR PROGRAMMING** A mathematical method used to determine the optimal distribution of limited resources between competing demands when both the objective (e.g., profit or cost) and the restrictions on its attainment are expressible as a system of linear equalities or inequalities (e.g., $y=a+bx$).

**LIMITED SURFACE USE STIPULATION** A mineral lease clause, which, if attached to a mineral lease, prohibits surface disturbing activities on the lease pending submission of a surface use and operations plan which is satisfactory to the BLM and the surface management agency for protection of special existing or planned uses. This stipulation may, when site-specific operations are proposed and analyzed, be modified if other less stringent mitigation is determined to be sufficient to protect the other resources.

**LOCAL DEPENDENT INDUSTRIES** Local industries relying on National Forest outputs for economic activity.

**LOCAL ROADS** These roads connect terminal facilities with Forest collector or Forest arterial roads or public highways. The location and standard are usually determined by the requirement of a specific resource activity rather than by travel efficiency. Forest local roads may be developed and operated for constant or intermittent service depending on land use and resource management objectives for the area served by the facility.

**LOCATABLE MINERALS** See Minerals locatable.

**LOESS** A uniform and unstratified fine sand or silt transported by wind.

**LONG-TERM SUSTAINED YIELD CAPACITY (LTSY)** The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified intensity of management consistent with multiple use objectives

**LOW IMPACT** Low impact use is use of an area with a minimum of physical and social disturbance to the natural environmental and where, at the end of the use period, minimal evidence remains of human activity.

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**M** Thousand

**MM** Million

**MAUM** Thousand Animal Unit Months.

**MBF** Thousand Board Feet

**MMBF** Million Board feet

**MMCF** Million Cubic feet

**MANAGEMENT ACTION** Any activity undertaken as part of the administration of the Forest.

**MANAGEMENT AREA** An aggregation of capability areas which have common management direction and may be noncontiguous in the Forest. Consists of a grouping of capability areas selected through evaluation procedures and used to locate decisions and resolve issues and concerns.

**MANAGEMENT CONCERN** An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the planning process.

**MANAGEMENT DIRECTION** A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

**MANAGEMENT EFFECTS** Physical, biological, social, and economic responses to management practices.

**MANAGEMENT EMPHASIS** A management practice or combination of management practices designed to stress production of a particular type of output or mix of outputs.

**MANAGEMENT INTENSITY** A management practice or combination of management practices and associated costs designed to obtain different levels of goods and services.

**MANAGEMENT OPPORTUNITY** A statement of general actions, measures, or treatments that address a public issue or management concern.

**MANAGEMENT PRACTICE** A specific activity, measure, course of action, or treatment. Proposed management practices are those scheduled in the first decade of Forest Plan implementation. Probable management practices are those scheduled in the second decade of Forest Plan implementation.

**MANAGEMENT PRESCRIPTION** Management practices and intensities selected and scheduled for application on a specific area to attain multiple use and other goals and objectives.

**MANAGEMENT STANDARDS AND GUIDELINES** See Standard and Guideline.

**MARKET VALUE** The unit price of an output normally exchanged in a market after at least one stage of production, expressed in terms of what people are willing to pay as evidenced by market transactions.

**MATURE TIMBER** Individual trees or stands of trees that in general are at their maximum rate in terms of the physiological processes expressed as height, diameter, and volume growth.

**MAXIMUM RESOURCE POTENTIAL** The maximum possible output of a given resource limited only by its inherent physical and biological characteristics.

**MEAN ANNUAL INCREMENT** The total volume increase in a tree or stand of trees up to a given age, divided by that age.

**MINERAL ENTRY** The filing of a mining claim on Federal land to obtain the right to mine any locatable minerals it may contain. Also the filing for a millsite on Federal land for the purpose of processing off-site locatable minerals.

**MINERAL WITHDRAWAL** A formal designation by the Secretary of the Interior which precludes entry or disposal of mineral commodities under the mining and/or mineral leasing laws.

**MINERAL EXPLORATION** The search for valuable minerals.

**MINERAL PRODUCTION** The extraction of mineral deposits.

**MINERALS, COMMON VARIETY** Deposits of sand, stone, gravel, etc., of widespread occurrence and not having distinct or special value. These deposits are used generally for construction and decorative purposes and are disposed of under the Materials Act of 1947.

**MINERALS, LEASABLE** Those minerals which are disposed of under authority of the various mineral leasing acts. Minerals include coal, oil, gas, phosphate, sodium, potassium, oil shale, sulfur (in Louisiana and New Mexico), and geothermal steam.

**MINERALS, LOCATABLE** Those minerals which are disposed of under the general mining laws. Included are minerals such as gold, silver, lead, zinc, and copper which are not classed as leasable or salable.

**MINIMUM MANAGEMENT REQUIREMENTS** Standards for resource protection, vegetative manipulation, silviculturist practices, even-aged management, riparian areas, soil and water and diversity, to be met in accomplishing National Forest System goals and objectives (see 36 CFR 219.27).

**MINIMUM RESOURCE STANDARDS** Specific conditions of individual resources which must be maintained in order to meet minimum management requirements (36 CFR 219.27) and/or other legal requirements.

**MINIMUM VIABLE** See Viable Population.

**MINING CLAIMS** A geographic area of the public lands held under the general mining laws in which the right of exclusive possession is vested in the locator of a valuable mineral deposit. Includes lode claims, placer claims, millsites, and tunnel sites.

**MITIGATE** To lessen the severity.

**MITIGATION** Avoiding or minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact by preservation and maintenance operations during the life of the action.

**MODIFICATION (VQO)** See Visual Quality Objective (VQO).

**MONITORING AND EVALUATION** The periodic evaluation on a sample basis of Forest Plan management practices to determine how well objectives have been met and how closely management standards have been applied.

**MONTANA WILDERNESS STUDY ACT AREAS** Those areas that are required to be studied for their wilderness suitability under the Montana Wilderness Study Act of 1977 (Public Law 95-150).

**MOUNTAIN PINE BEETLE** A species of bark beetle that spends the major portion of its life cycle in a tree's cambium layer. Through a combination of the insect feeding on the cambium layer and the introduction of fungi which stop the resin flow, the tree is girdled and killed.

**MULTIPLE USE** The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

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**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)** An act which encourages productive and enjoyable harmony between man and his environment; promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation; and establishes a Council on Environmental Quality.

**NATIONAL FOREST LANDSCAPE MANAGEMENT ACT (NFMA)** The planning and design of the visual aspects of multiple-use land management in such ways that the visual effects maintain or upgrade man's psychological welfare.

**NATIONAL FOREST MANAGEMENT ACT (NFMA)** A law passed in 1976 as amendment to the Forest and Range land Renewable Resources Planning Act that requires the preparation of Regional and Forest plans and the preparation of regulations to guide that development.

**NATIONAL FOREST SYSTEM** All National Forest lands reserved or withdrawn from the public domain of the United States; all National Forest lands acquired through purchase, exchange, donation, or other means; the National Grasslands and Land Utilization Projects administered under Title III.

**NATIONAL RECREATION TRAILS** Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the National system of trails authorized by the National Trails System Act. National recreation trails provide a variety of outdoor recreation uses.

**NATIONAL REGISTER OF HISTORIC PLACES** A listing maintained by the National Park Service of areas which have been designated as being of historical significance. The Register includes places of local and State significance as well as those of value to the Nation as a whole.

**NATIONAL WILD AND SCENIC RIVER SYSTEM** Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition.

**NATIONAL WILDERNESS PRESERVATION SYSTEM** All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.

**NEPA** See National Environmental Policy Act.

**NFMA** See National Forest Management Act.

**NET PUBLIC BENEFITS** An expression used to signify the overall long-term value to the Nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield.

**NO ACTION ALTERNATIVE** The management direction, activities, outputs, and effects most likely to exist in the future if the current plan would continue unchanged.

**NONCHARGEABLE VOLUME** All volume that is not included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity. It also includes all volume removed from nonsuitable lands.

**NONCOMMODITY OUTPUTS** See Output, Nonmarket.

**NONCONSUMPTIVE USE** Those uses of resources that do not reduce the supply. Nonconsumptive uses of water include hydroelectric power generation, boating, swimming, etc.

**NONDECLINING FLOW** The principle that the quantity of timber planned for sale or harvest for any future decade must be equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity.

**NONDECLINING YIELD** See Nondeclining Flow.

**NONEXTRACTIVE USE** Use which does not remove a resource from its natural setting.

**NONGAME** Species of animals which are not managed as a sport hunting resource.

**NONPOINT SOURCE POLLUTION** Sources from which the pollutants discharged are: (1) induced by natural processes, including precipitation, seepage, percolation, and runoff; (2) not traceable to any discrete or identifiable facility; and (3) better controlled through the utilization of Best Management Practices, including process and planning techniques. This includes natural pollution sources not directly or indirectly caused by man.

**NONPRICE OUTPUTS** See Output, Nonmarket.

**NONSTOCKED** A stand of trees or aggregation of stands that has a stocking level below the minimum specified for meeting the prescribed management objectives.

**NO-SURFACE OCCUPANCY STIPULATION** A mineral lease clause which, if attached to a mineral lease, prohibits the lessee from constructing roads, well pads, or otherwise occupying the land surface unless, upon site-specific review, it is determined by the authorized officer that the requirements of the stipulation can be modified if other less stringent mitigation is determined to be sufficient to protect the other resources.

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**OBJECTIVE** A concise time-specific statement of measurable planned results that respond to preestablished goals. An objective forms the basis for further planning, to define the precise steps to be taken and the resources to be used in achieving identified goals.

**OBJECTIVE FUNCTION** A term used in linear programming describing the criteria to be optimized. Examples of objective functions are: maximize present net value, minimize cost or maximize timber.

**OFF-ROAD VEHICLE** Any vehicle capable of being operated off an established road or trail; e.g., motorbikes, four-wheel drives, and snowmobiles.

**OLD GROWTH DEPENDENT SPECIES** The group of wildlife species that is associated with old-growth forest plan communities.

**OLD GROWTH HABITAT** A community of forest vegetation which has reached a late stage of plant succession characterized by a diverse stand structure and composition, along with a significant showing of decadence. The stand structure will have multistoried crown heights and variable crown densities. There is a variety of tree sizes and ages ranging from small groups of seedlings and saplings to trees of large diameters exhibiting a wide range of defect and breakage both live and dead, standing and down. The time it takes for a forest stand to develop into old growth condition depends on many local variables such as forest type, habitat type, and climate. Natural chance events involving forces of nature such as weather, insect, disease, fire, and the actions of man also affect the rate of development of old growth stand conditions.

**OLD GROWTH TIMBER** See Overmature Timber.

**OPERATIONS PLAN** See Plan of Operation.

**OPPORTUNITY COST** An opportunity cost is value foregone. In this analysis it is a cost calculated as the difference between present net value of the alternative and the present net value of the maximum PNV increment.

**OPTIMUM** The greatest level of production that is consistent with other resource requirements as constrained by environmental, social, and economically sound conditions.

**OUTPUT** A good, service, or on-site use that is produced from forest and rangeland resources. Forest and rangeland output definitions, codes, and units measure are contained in the Management Information Handbook (FSH 1309.11). Examples are: X06-Softwood Sawtimber Production - MBF; X80-Increased Water Yield - Acre Feet; W01-Primitive Recreation Use - RVD's.

**OUTPUT, CONTROLLED** The amount of an output which management has the legal and practical ability to control with management activities.

**OUTPUT, DIRECT** An output that fulfills specified objectives of the policy, program, or project being evaluated.

**OUTPUT, INDUCED** A good, service, or on-site use which is incidental to the objectives of the resource activity. An example is the timber harvest activity which produces a primary output of board feet of timber and an induced output of acres of improved wildlife habitat because of the harvest activity.

**OUTPUT, MARKET** A good, service, or on-site use that can be purchased at a price.

**OUTPUT, NONCONTROLLED** The amount of an output which will occur regardless of management activity.

**OUTPUT, NONMARKET** A good, service, or on-site use not normally exchanged in a market.

**OUTPUT, PRIMARY** A good, service, or on-site use that results from the completion of an activity, project or program that meets the specific objectives of the resource. Examples are board feet of timber, recreation visitor days, etc.

**OVER-THE-COUNTER SALE** The selling of Forest products without bidding, as requested by the general public, usually for products such as fuelwood, corral poles, ornamental shrubs, etc.

**OVERMATURE TIMBER** Individual trees or stands of trees that in general are past their maximum rate in terms of the physiological processes expressed as height, diameter, and volume growth.

**OVERSTORY** That uppermost canopy of the forest when there is more than one level of vegetation.

**OVERTHRUST BELT** A complex geologic feature, extending from Alaska to Mexico, which resulted from compressional stresses within the earth, and which is characterized by abundant thrust faults. This zone passes through and includes all of western Montana.

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**PARTIAL RETENTION (VQO)** See Visual Quality Objective (VQO).

**PARTICULATES** Small particles suspended in the air and generally considered pollutants.

**PATENTED MINING CLAIMS** A patent is a document which conveys title to land. When patented, a mining claim becomes private property and is land over which the United States has no property rights, except as may be reserved in the patent. After a mining claim is patented, the owner does not have to comply with requirements of the General Mining Law or implementing regulations.

**PERENNIAL STREAMS** Streams that flow continuously throughout most years.

**PAYMENT IN LIEU OF TAXES** Payments on a fiscal year basis to each unit of local government in which entitlement lands (lands owned by the United States) are located and not directly dependent on production of outputs or receipt sharing. Specifically, they include payments made under the Payments in Lieu of Taxes Act of 1976 by the U.S. Department of the Interior.

**PERMITTED GRAZING** Use of a National Forest range allotment under the terms of a grazing permit.

**PERSON YEAR (WORK YEAR)** A person year equals 2,087 hours of work time. A person year may be one person working yearlong or several persons filling seasonal positions.

**PLAN OF OPERATIONS** A written plan describing mining and mineral processing activities that will likely cause a significant surface disturbance. The plan is prepared by those engaged in activities, such as prospecting, exploration, or mining in the National Forest. This plan must be approved by a Forest Officer.

**PLANNING AREA** The area of the National Forest System covered by a Regional or Forest Plan.

**PLANNING CRITERIA** Standards, tests, rules, and guidelines by which the planning process is conducted and upon which judgments and decisions are based.

**PLANNING HORIZON** The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions. In the National Forest planning process, this is 150 years.

**PLANNING PERIOD** A time interval for which inputs and outputs are identified in a planning process. Current RPA and National Forest Plan intervals are 5 and 10 years, respectively.

**PLANNING RECORDS** Documents and files that contain detailed information and decisions made in developing the Forest Plan. Records are available at the Forest Supervisor's Office.

**PNV** See Present Net Value.

**POLETIMBER TREES** Live trees of commercial species at least 5 inches in diameter at breast height, but smaller than sawtimber size, and of good form and vigor.

**POLICY** A guiding principle upon which a specific decision or set of decisions are based.

**POTENTIALLY (TENTATIVELY) SUITABLE LAND** National Forest System land (as defined in CFR 219.3) for which technology is available that ensures timber production without irreversible resource damage to soils, productivity, or watershed conditions; for which there is reasonable assurance that such lands can be restocked (CFR 219.14); and which is available for timber management.

**PRACTICE** See Management Practice.

**PRECAMBRIAN** Period of geologic time extending from more than 3,600 years to about 570 million years ago.

**PRECOMMERCIAL THINNING** The selective felling, deadening, or removal of trees in a young stand primarily to accelerate diameter increment on the remaining stems, maintain a specific stocking or stand density range, and improve the vigor and quality of the trees that remain.

**PREDATOR** One that preys, destroys, or devours - usually an animal that lives by preying on other animals.

**PREFERRED ACTION** The alternative recommended for implementation by the responsible official from the range of alternatives studied in a Draft Environmental Impact Statement or Assessment under requirements of the 1979 National Environmental Policy Act.

**PREPARATORY CUT** Removal of trees near the end of a rotation so as to permanently open the canopy and enlarge the crowns of seed bearers, with the intent of improving conditions for seed production and natural generation, typical in shelterwood systems.

**PRESCRIBED BURNING** The intentional application of fire to wildland fuels in either their natural or modified state under such conditions that allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to further certain planned objectives (i.e., silviculture, wildlife management, etc.).

**PRESCRIBED FIRE** A fire burning under specified conditions which will accomplish planned objectives in strict compliance with an approved plan, and the conditions under which the burning takes place and the expected results are specific, predictable, and measurable.

**PRESCRIPTION** See Management Prescription.

**PRESENT NET VALUE (PNV)** The difference between the discounted value (benefits) of all outputs to which monetary value or established market prices are assigned and the total discounted costs of managing the planning area.

**PRESENT NET WORTH** The discounted value of price times quantity less cost.

**PRESERVATION (VQO)** See Visual Quality Objectives (VQO).

**PRESUPPRESSION** Activities required in advance of fire occurrence to ensure effective suppression action. Includes (1) recruiting and training fire forces; (2) planning and organizing attack methods; (3) procuring and maintaining fire equipment; and (4) maintaining structural improvements necessary for the fire program.

**PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY (PSD)** A classification established to preserve, protect, and enhance the air quality in National Wilderness Preservation System areas in existence prior to August 1977 and other areas of National significance, while ensuring economic growth can occur in a manner consistent with the preservation of existing clean air resources. Specific emission limitations and other measures, by class, are detailed in the Clean Air Act (42 U.S.C. 1875 et 15q.).

**PRICED OUTPUTS** Resource outputs that have market or assigned dollar values.

**PRIMITIVE RECREATION SETTING** A classification of the recreation opportunity spectrum that characterizes an essentially unmodified natural environment of a size or remoteness that provide significant opportunity for isolation from the signs and sounds of man and a feeling of vastness of scale. Visitors have opportunity to be part of the natural environment, encounter a high degree of challenge, and use a maximum of outdoor skills but have minimum opportunity for social interaction.

**PRIMITIVE ROADS** Roads that came into existence with little regard for grade or drainage control, or were abandoned facilities from some prior use. They are sometimes created merely by repeated driving over an area. Such roads are rarely, if ever, maintained and then only by users. These roads are single lane, usually with native surfacing, and sometimes passable with four-wheel drive vehicles only, especially in wet weather.

**PRIMITIVE SETTING** A large area (generally at least 5,000 acres) at least 3 miles from all roads, railroads, or trails with motorized use. The area is essentially a natural environment unmodified by man.

**PRODUCTION POTENTIAL** The capability of the land or water to produce life-sustaining features (forage, cover, aquatics).

**PRODUCTIVITY** See Site Productivity.

**PROGRAM DEVELOPMENT AND BUDGETING** The process by which activities for the Forest are proposed and funded.

**PROPOSED ACTION** In terms of the National Environmental Policy Act, the project, activity, or action that a Federal agency intends to implement or undertake and which is the subject of an environmental analysis.

**PRUNING** The removal of live or dead branches from standing trees.

**PUBLIC ACCESS** Usually refers to a road or trail route over which a public agency claims a right-of-way available for public use.

**PUBLIC INVOLVEMENT** A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) Informing the public about Forest Service activities, plans, and decisions, and (2) Encouraging public understanding about and participation in the planning processes which lead to final decision making.

**PUBLIC ISSUE** A subject or question of widespread public interest identified through public participation relating to management of National Forest System lands.

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**RANGE ALLOTMENT** A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under a range allotment management plan. It is the basic land unit used to facilitate management of the range resource on National Forest System and associated lands administered by the Forest Service.

**RANGE, TRANSITORY** See Transitory Range.

**RANGELAND** Land on which the climax vegetation (potential natural plant community) is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing and browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain forb and shrub communities. It also includes areas seeded to native or adapted introduced species that are managed like native vegetation.

**RANGER DISTRICT** Administrative subdivision of the Forest supervised by a District Ranger.

**RARE II** See Roadless Area Review and Evaluation II.

**REAL DOLLAR** A monetary value that compensates for inflation.

**RECEIPTS** Money collected from timber stumpage, livestock grazing, campgrounds, special-use permits, and oil and gas lease rentals and royalties, and returned to the Federal treasury.

**RECORD OF DECISION** A document separate from but associated with an environmental impact statement that publicly and officially discloses the responsible official's decision on the proposed action.

**RECREATION CAPACITY** The number of people that can take advantage of a recreation opportunity at any one time without substantially diminishing the quality of the experience sought after.

**RECREATION EXPERIENCE LEVEL** A concept used in recreation management to delineate the range of opportunities for satisfying basic recreation needs of people. A scale of five experience levels ranging from "primitive" to "highly developed" is planned for the National Forest System.

**RECREATION INFORMATION MANAGEMENT (RIM)** The Forest Service system for recording recreation facility condition and use.

**RECREATION LIVESTOCK USE** The use of an area by animals, such as horses and mules, which are used primarily in conjunction with recreation activities.

**RECREATION MANAGEMENT AREA** An area of several thousand acres in which the management emphasis is on recreation and in which direction is given to establish a Recreation Area Management Plan.

**RECREATION OPPORTUNITIES** The combination of recreation settings, activities, and experiences provided by the Forest.

**RECREATION OPPORTUNITY GUIDE** A catalogue describing the recreation activities available on a particular Ranger District.

**RECREATION OPPORTUNITY SPECTRUM (ROS)** A system for planning and managing recreation resources that recognizes recreation activity opportunities, recreation settings, and recreation experiences along a spectrum or continuum.

**RECREATION PREFERENCE TYPE (RPT)** A term used to indicate the types of recreation experiences sought after by Forest users. They are overlapping portions of the total recreation preferences spectrum that the public may express demands for.

RPT I. Orientations toward using natural, unmodified environment for the appreciation and understanding of natural phenomena; as a source of intellectual and/or physical challenges; for seeking solitude; and for esthetic stimulations.

RPT II. Orientations toward using natural or semiprimitive environment in searching for and extraction of indigenous fish and/or game species, rocks, minerals, edible plants, etc., and for enjoyment of the physical surroundings in which such extractable objects are found.

RPT III. Orientations toward using semiprimitive, lightly developed areas for relaxing in natural surroundings; as a source of tranquility and freedom from tension; and for esthetic stimulation.

RPT IV. Orientations toward using moderately developed areas and surrounding environment for intentional social interaction and group learning experiences.

RPT V. Orientations toward using highly developed areas for social interactions with many other people and for pursuits which allow for the expression of learned physical abilities.

**RECREATION RESIDENCE** A house or cabin on National Forest land for seasonal recreational use that is not the primary residence of the owner.

**RECREATION TYPES** Developed Recreation - The type of recreation that occurs where modifications (improvements) enhance recreation opportunities and accommodate intensive recreation activities in a defined area.

Dispersed Recreation - That type of recreation use related to and in conjunction with roads and trails that requires few if any improvements and may occur over a wide area. Activities tend to be day-use oriented and include hunting, fishing, berrypicking, off-road vehicle use, hiking, horseback riding, picniking, camping, viewing scenery, snowmobiling, and many others.

**RECREATION VISITOR DAY (RVD)** One visitor day equals 12 hours (one person for 12 hours, or 12 people for 1 hour, or any combination thereof).

**REDUCED SERVICE MANAGEMENT** The administration, operation and maintenance of developed recreation sites to established standards with the objective to meet minimum health and safety needs of the visitor and keep the site open to public use.

**REFORESTATION** The renewal of forest cover by seeding, planting, and natural means.

**REGENERATION** The renewal of a tree crop, whether by natural or artificial means. This term may also refer to the crop itself.

**REGIONAL FORESTER** The official responsible for administering a single Region of the Forest Service.

**REGIONAL GUIDE** A document developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and established management standards and guidelines for National Forest System lands of a given Region to the Forests within a given Region. It also disaggregates the RPA objectives assigned to the Region to the Forests within that Region.

**REGIONAL LAND AND RESOURCE MANAGEMENT PLAN** The plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and established management standards and guidelines for the National Forest System lands of a given Region. It also disaggregates the RPA objectives assigned to the Region to the Forests within that Region.

**REGULATED** The commercial forest land that is organized for timber production under the principle of sustained yield. The harvest of timber from this land is regulated to achieve multiple long-range objectives, such as maintaining setting for recreational activities, rotating forage production areas and wildlife habitat, increasing water production yield, and increasing the growth and utilization of timber for the Nation's supply.

**REGULATIONS** Refers to the Code of Federal Regulations for implementing the National Forest Management Act, 36 CFR, Part 219.

**RENEWABLE RESOURCES** Resources that are possible to use indefinitely, when the use rate does not exceed the ability to renew the supply. In the RPA program, the term is used to describe those matters within the scope of responsibilities and authorities of the Forest Service as required by the Forest and Rangeland Renewable Resouces Planning Act of 1974. The renewable resources include: timber, range, minerals, wildlife and fish, water, recreation, and wilderness.

**RENEWABLE RESOURCES ASSESSMENT** An appraisal of the Nation's renewable resources that recognizes their vital importance and the necessity for long-term planning and associated program development. The Assessment meets the requirements of Section 3 of the Forest and Rangeland Renewable Resources Planning Act and includes analysis of present and anticipated uses, demands, and supplies of the renewable resources; a description of Forest Service programs and responsibilities; and a discussion of policy considerations, laws, and regulations.

**RENEWABLE RESOURCES PROGRAM** The program for management and administration of the National Forest Service System, for Research, for Cooperative State and Private Forest Service programs, and for conduct of other Forest Service activities in accordance with Section 4 of the Forest and Rangeland Renewable Resources Planning Act.

**RESOURCE DESIGNATION MODEL** A mathematical model using linear programing which will assign prescriptions to land areas and schedule implementation of those prescriptions simultaneously. The end purpose of the model is to find a schedule and prescription assignment that meets the goals of the Forest and optimizes some objective function such as "maximize PNV."

**RESOURCE ELEMENT (SUPPORT ELEMENT)** A collection of activities from the various operating programs required to accomplish the Forest Sevice mission and which fulfill statutory or Executive requirements. There are seven resource elements: Recreation, Wilderness, Wildlife and Fish, Range, Timber, Water, and Minerals.

**RESEARCH NATURAL AREA** An area in as near a natural condition as possible, which exemplifies typical or unique vegetation and associated biotic, soil, geologic, and acquatic features. The area is set aside to preserve a representative sample of an ecological community primarily for scientific and educational purposes; commercial and general public use is not allowed.

**RETENTION (VQO)** See Visual Quality Objectives (VQO).

**RIGHT-OF-WAY** Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project facility passing over, upon, under, or through such land.

**RIPARIAN AREAS** Areas with distinctive resource values and characteristics that are comprised of an aquatic ecosystem and adjacent upland areas that have direct relationships with the aquatic system. This includes flood plains, wetlands, and all areas within a horizontal distance of approximately 100 feet from the normal high waterline of a stream channel, or from the shoreline of a standing body of water.

**RIPARIAN ECOSYSTEM** A transition between the aquatic ecosystem and the adjacent upland terrestrial ecosystem. It is identified by soil characteristics and by distinctive vegetative communities that require free or unbounded water.

**ROAD CREDITS** Credits earned by timber purchasers and which are applied toward the sale price of timber in exchange for building the roads needed for access.

**ROAD MAINTENANCE LEVELS** Road maintenance levels are as follows:

Level 1: Basic custodial care as required to protect the road investment and to see that damage to adjacent land and resources is held to a minimum. The road is not normally open to traffic.

Level 2: Same basic maintenance as Level 1 plus logging out, brushing out, and restoring the road prism as neccessary to provide passage. Route markers and regulation signs are in place and useable. Road is open for limited passage of traffic, which is usually administrative use, permitted use, and/or specialized traffic.

Level 3: Road is maintained for safe and moderately convenient travel suitable for passenger cars. Road is open for public travel, but has low traffic volumes except during short periods of time (e.g. hunting season).

Level 4: At this level, more consideration is given to the comfort of the user. Road is usually surfaced with aggregate or is paved and is open for public travel.

Level 5: Safety and comfort are important considerations for these roads which are open to public traffic and generally receive fairly heavy use (100 average daily traffic or more). Roads have an aggregate surface or are paved.

**ROAD MANAGEMENT** The combination of both traffic and maintenance management operations. Traffic management is the continuous process of analyzing, controlling and regulating uses to accomplish National Forest objectives. Maintenance management is the perpetuation of the transportation facility to serve intended management objectives.

**ROADED NATURAL-APPEARING RECREATION SETTING** A classification on the recreation opportunity spectrum where timber harvest or other surface use practices are evident. Motorized vehicles are permitted on all or parts of the road system.

**ROADLESS AREA** A National Forest area which (1) is larger than 5,000 acres or, if smaller than 5,000 acres, contiguous to a designated wilderness or primitive area; (2) contains no roads, and (3) has been inventoried by the Forest Service for possible inclusion in the wilderness preservation system.

**ROADLESS AREA REVIEW AND EVALUATION (RARE) II** A comprehensive process, instituted in June 1977, to identify roadless and undeveloped land areas in the National Forest System and to develop alternatives for both wilderness and other resource management.

**ROTATION** The planned number of years between the formation or generation of trees and their harvest at a specified stage of maturity.

**ROUNDWOOD** The volume of logs or other round products required to produce lumber, plywood, woodpulp, paper, or other similar products.

**RPA** See Forest and Rangeland Renewable Resources Planning Act of 1974

**RURAL RECREATION SETTING** A classification on the recreation opportunity spectrum that is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high.

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**SALE SCHEDULE** See Base Sale Schedule.

**SALVAGE HARVEST** The cutting of trees that are dead, dying, or deteriorating (e.g., because they are overmature or materially damaged by fire, wind, insects, fungi, or other injurious agencies) before they lose their commercial value as sawtimber.

**SANITATION HARVEST** The removal of dead, damaged, or susceptible trees, essentially to prevent the spread of pests or pathogens and so promote forest hygiene.

**SAWTIMBER** Trees containing at least one 12-foot sawlog or two noncontiguous 8-foot logs and meeting regional specifications for freedom from defect. Softwood trees must be at least 9 inches in diameter and hardwood trees 11 inches in diameter at breast height.

**SCENIC EASEMENT** A legal interest in the land of another which allows the easement holder specified uses or rights without actual ownership of the land; in this case, control of the use of land adjacent to public highways, parks, and rivers. It may provide something attractive to look at within the easement area, an open area to look through to see something attractive beyond the easement itself, or a screen to block out an unsightly view beyond the easement area.

**SCOPING PROCESS** An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to the proposed action. Identifying the significant environmental issues deserving of study and deemphasizing insignificant issues, narrowing the scope of the environmental impact statement accordingly. (Ref. CEQ regulations, 40 CFR 1501.7).

**SEDIMENT** Solid material, both mineral and organic, that is in suspension, being transported, or has been moved from its site of origin by air, water, gravity, or ice.

**SEED TREE CUTTING** The removal in one cut of most of the mature trees from an area, leaving only a small number of desirable trees to provide seed for regeneration.

**SEEDLING/SAPLING** A size category for forest stands in which trees less than 5 in. in diameter are the predominant vegetation.

**SEISMIC EXPLORATION** Seismic exploration is used to map underground geological features to obtain information on the earth's subsurface and to locate areas where accumulations of oil and gas might occur.

Seimic waves, generated at or near the surface, penetrate the earth's crust and reflect from subsurface rock layers back to the surface. The geophysicist receives a printed record or seismograph from which is measured the depth to various strata and from which subsurface structures with a potential for oil and gas accumulation can be determined such as faults, anticlines, and folds.

Portable - Where access limitations, topography, or other restraints prevent use of trucks, portable operations can be performed. Two portable techniques exist for collecting data. These are:

(1) Surface charge programs involve the detonation of a series of as much as 50 to 100 pounds of explosives at shot points located at intervals along the seismic line. Surface charges can be placed directly on the ground, on snow, or on a variety of stakes or platforms. All necessary equipment to conduct the operation is transported by helicopters and then conveyed by foot travel.

(2) Various kinds of portable drills can be backpacked or delivered by helicopter to the area. A shallow subsurface portable program would involve drilling a pattern of approximately 16 holes about 4 inches in diameter up to 50 feet deep per mile of line. At this depth, a 10- to 40-pound charge of explosive is placed and detonated. Recording cables and geophones are laid out by foot travel.

With both of these portable techniques, shock waves generated by detonation are received and transmitted via geophones and cable to a recording device. Portable methods are generally used on the Forest.

Conventional - The conventional method of collecting seismic data includes the use of truck-mounted drills and vehicle-supported crews and generally involves off-road travel. This technique involves drilling 5 to 18 5-inch diameter holes per mile to a depth of 180 to 200 feet. At this depth, a 10- to 100-pound explosive charge is placed and detonated. Shock waves are received and transmitted via geophones and cable to a truck-mounted recording device. Due to terrain restrictions, this method has limited application on the Forest.

Vibroseis - The vibroseis technique involves using truck-mounted hydraulic pads which generate energy waves through vibration rather than explosives. The vibrator method typically consists of four large trucks each equipped with a vibrator (a steel slab weighing about 3 tons) mounted between the front and back wheels. The vibrator pads (about 4 feet square) are lowered to the ground and vibrators on all trucks are triggered electronically from the recorder truck. Energy waves are received and transmitted via cable and geophones to a recorder truck. After the information is recorded, the trucks move forward a short distance and the process is repeated. The vibroseis operation is usually limited to roads and gentle terrain.

**SELECTION CUTTING** The annual or periodic removal of trees as part of an uneven-age silvicultural system. Cutting can involve individual trees or small groups of trees to meet a predetermined goal of size and species composition in the remaining stand.

**SEMIPRIMITIVE RECREATION SETTING** A classification on the recreation opportunity spectrum that characterizes a predominately natural or natural-appearing environment of a moderate to large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum onsite controls and restrictions may be present, but are subtle.

**SENSITIVE SPECIES** Those plant or animal species which are susceptible or vulnerable to activity impacts or habitat alterations.

**SEQUENTIAL BOUNDS** A set of constraints used in linear program models to establish the relationship of the quantity of an output to preceding and succeeding quantities of that output (e.g. the forage production in one time period cannot increase or decrease over 10 percent from the forage production of the previous time period).

**SERAL** A biotic community which is developmental; a transitory stage in an ecologic succession.

**SHELTERWOOD CUTTING** The removal of a stand of trees through a series of cuttings designed to establish a new crop with seed and protection provided by a portion of the stand.

**SILVICULTURAL EXAMINATION** The process used to gather the detailed in-place field data needed to determine management opportunities and direction for the timber resource within a small subdivision of a forest area such as a stand.

**SILVICULTURAL SYSTEMS** A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. It includes all cultural management practices performed during the life of the stand such as regeneration cutting, fertilization thinning, improvement cutting, and use of genetically improved tree seeds and seedlings to achieve multiple resource benefits. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration and according to the type of Forest they produce.

**SITE PREPARATION** A general term for a variety of activities that remove competing vegetation, slash, and other debris that may inhibit the reforestation effort.

**SITE PRODUCTIVITY** Production capability of specific areas of land.

**SLASH** The residue left on the ground after felling and other silvicultural operations and/or accumulating there as a result of storm, fire, girdling, or poisoning of trees.

**SMALL GAME** Birds and small mammals normally hunted or trapped.

**SNAG** A standing dead tree usually greater than 5 feet in height and 6 inches in diameter at breast height.

**SOCIAL ORGANIZATION** The structure of a society described in terms of institutions, community cohesion, and community stability.

**SOCIAL VARIABLE** A variable that measures the social impact of Forest Service management alternatives. Examples include population statistics, types of institutions, and personal opinion as reflected in attitudes or as demonstrated by behavior.

**SOIL PRODUCTIVITY** The capacity of a soil to produce a specific crop such as fiber and forage, under defined levels of management. It is generally dependent on available soil moisture and nutrients and length of growing season.

**SPECIAL-USE PERMIT** A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest System land for some special purpose.

**STAGNATION** A condition where plant growth is markedly reduced or even arrested through competition, state of the soil, or disease.

**STAND** A community of trees or other vegetative growth occupying a specific area and sufficiently uniform in composition (species), age, spatial arrangement, and conditions as to be distinguishable from the other growth on adjoining lands, so forming a silvicultural or management entity.

**STANDARD AND GUIDELINE** An indication or outline of policy or conduct.

**STIPULATIONS** Requirements that are part of the terms of a mineral lease. Some stipulations are standard on all Federal leases. Other stipulations may be applied to the lease at the discretion of the surface management agency to protect valuable surface resources and uses.

**STOCKING** A measure of timber stand density as it relates to the optium or desired density to achieve a given management objective.

**STREAM ORDER** A measure of the position of a stream in the hierarchy of tributaries. (Stream as referenced here refers to perenniel streams.)

(1) First-order streams are unbranched streams, that is they have no tributaries.

(2) Second-order streams are formed by the confluence of two or more first-order streams. They are considered second-order until they join another second-order or larger stream.

(3) Third-order streams are formed by the confluence of two or more second-order streams. They are considered third-order until they join another third-order or larger stream.

**SUBDIVISIONS** Areas of previously undeveloped land divided into individual homesites and/or blocks of lots with streets or roads and open spaces.

**SUCCESSIONAL STAGE** A phase in the gradual supplanting of one community of plants by another.

**SUITABILITY** The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

**SUITABILITY ANALYSIS** Process of identifying National Forest System lands to be managed for timber production. Stage I identifies the biologically capable, administratively available, and technically suitable lands. Stage II consists of an economic analysis of costs and benefits of timber management on the lands identified in Stage 1. Stage III provides the final assignment of suitable lands based on Forest objectives and economic efficiency.

**SUITABLE FOREST LAND** National Forest System land (as defined in CFR 219.3) for which technology is available that will ensure timber production without irreversible resource damage to soils, productivity, or watershed conditions; for which there is reasonable assurance that such lands can be adequately restocked (as provided in CFR 219.14); and for which there is management direction that indicates that timber production is an appropriate use of that area.

**SUPPLY** The amount of an output that producers are willing to provide at a specific price, time period, and conditions of sale.

**SUPPORT ELEMENT** A collection of major Forest Service activities which complement the resource elements. There are five support elements: Protection, Lands, Soils, Facilities and Rural Community, and Human Resources.

**SUPPRESSION (FIRE SUPPRESSION)** Any act taken to slow, stop, or extinguish a fire. Examples of suppression activities include fireline construction, backfiring, and application of water or chemical fire retardants.

**SUSTAINED YIELD** The achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the National Forest without impairing the productivity of the land.

**SYSTEM ROADS** See Forest System Road.

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**TARGET** A quantifiable output assigned to the Forest.

**TECHNICALLY SUITABLE FOREST LAND** Land for which technology is available that will ensure timber production without irreversible resource damage to soils, productivity, or watershed conditions. There is reasonable assurance that such lands can be adequately restocked as provided in CFR 219.13(h)(3).

**TEMPORARY ROAD** Those roads needed only for the purchaser or permittee's use. The Forest Service and the purchaser or permittee must agree to the location and clearing widths. Temporary roads are used for a single, short-term use; e.g., to haul timber from landings to Forest development roads, access to build water developments, etc..

**THERMAL COVER** Thermal cover is defined as the point in the growth of a stand of evergreen coniferous trees when it has a minimum average height of 60 feet and has a minimum crown canopy of 70 percent.

**THREATENED AND ENDANGERED SPECIES** Any species, plant of animal, which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Threatened species are identified by the Secretary of the Interior in accordance with the 1973 Endangered Species Act.

**THREE-STEP SHELTERWOOD** An even-aged silvicultural system in which the old crop (the shelterwood) is removed in three successive cuttings in order to provide a source of seed and/or protection for regeneration.

**TIERING** Refers to the elimination of repetitive discussions of the same issue by incorporating by reference the general discussion in an environmnetal impact statement of broader scope. For example, a project environmental assessment could be tiered to the Forest Plan EIS.

**TIMBER** A general term for the major woody growth of vegetation in a forest area.

**TIMBER HARVEST SCHEDULE** The quantity of timber planned for sale and harvest by time period, usually a decade, of the Forest Plan. The first period, usually a decade, of the selected harvest schedule provides the allowable sale quantity. Future periods are shown to establish that sustained yield will be achieved and maintained.

**TIMBER BASE** The lands within the Forest that are suitable for timber production.

**TIMBER PRODUCTION** The purposeful growing, tending, harvesting, and regeneration of rotational crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For purposes of Forest planning, timber production does not include production of fuelwood or harvest from unsuitable lands.

**TIMBER STAND IMPROVEMENT (TSI)** All noncommercial intermediate cuttings and other treatments to improve composition, condition, and volume growth of a timber stand.

**TRAILHEAD** The parking, signing, and other facilities available at the terminus of a trail.

**TRANSITORY RANGE** Land that is suitable for grazing use for a period of time. For example, on particular disturbed lands, grass may cover the area for a period of time before being replaced by trees or shrubs not suitable for forage.

**TREE OPENING** An opening in the Forest cover created by the application of even-aged silvicultural practices. The Northern Regional Guide established size limitations and guidelines to determine when cut areas are no longer considered openings.

**TRESPASS** The act of going on another's land or property unlawfully.

**TWO-STEP SHELTERWOOD** An even-aged silvicultural system in which the old crop (shelterwood) is removed in two successive cuttings in order to provide a source of seed and/or protection for regeneration.

**UNDERSTORY** The trees and other woody species which grow under a more or less continuous cover of branches and foliage formed collectively by the upper portion of adjacent trees and other woody growth.

**UNEVEN-AGED MANAGEMENT** The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection.

Individual Tree Selection Cutting - The removal of selected trees from specified size and age classes over the entire stand area in order to meet a predetermined goal of size or age distribution and species composition in the remaining stand.

Group Selection Cutting - The removal of small groups of trees to meet a predetermined goal of size distribution and species in the remaining stand.

**UNREGULATED HARVEST** This harvest is not charged against the allowable sale quantity. It includes occasional volumes removed that were not recognized in calculations of the allowable sale quantity, such as cull or dead material and noncommercial species and products. It also includes all volume removed from unsuitable areas. Harvests from unsuitable areas will be programed as needed to meet multiple-use objectives other than timber production and for improvement of administrative sites.

**UNSUITABLE TIMBERLAND** Lands not selected for timber production in Steps II and III of the suitablility analysis during the development of the Forest Plan due to (1) the multiple-use objectives for the alternative preclude timber production, (2) other management objectives for the alternative limit timber production activities to the point where management requirements set forth in 36 CFR 219.27 cannot be met, and (3) the lands are not cost-efficient over the planning horizon in meeting Forest objectives that include timber production. Land not appropriate for timber production shall be designated as unsuitable in the Forest Plan.

**UTILITY CORRIDOR** See Corridor

**UTILIZATION STANDARDS** Standards guiding the use and removal of timber. They are measured in terms of diameter at breast height (d.b.h.) and top of the tree inside the bark (top d.i.b.) and the percentages of "soundness" of the wood.

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**VALUE, MARKET** The unit price of an output normally exchanged in a market after at least one stage of production, expressed in terms of what people are willing to pay as evidenced by market transactions.

**VALUE, NONMARKET** The unit price of an output not normally exchanged in a market after at least one stage before consumption, and thus must be imputed from other economic information.

**VEGETATION TREATMENT** Any activities undertaken to modify the existing condition of the vegetation.

**VIABLE POPULATION** A population which has adequate numbers and dispersion of reproductive individuals to ensure the continued existence of the species population in the planning area.

**VISITOR INFORMATION SERVICE (VIS) SITE** A site which provides interpretative information, (directional, historical, statistical) located at Forest historical sites, overlook sites, or special interest areas.

**VISUAL ABSORPTION CAPABILITY (VAC)** Visual absorption cability is an estimate of the relative ability of a landscape to accept management manipulations without significantly affecting its visual character. It is a measure of the relative capability of the land to absorb visual change.

- Low VAC classification indicates a visually intolerant landscape, one where brightly colored soils, slow growing vegetation, steep slopes or other factors that make it difficult to meet any visual quality objective.
- Medium VAC classification would indicate a management objective allowing considerable change in the landscape.
- High VAC classification indicates a visually tolerant landscape. Various operations would be easy to design that would still meet the visual quality objective.

**VISUAL QUALITY OBJECTIVE (VQO)** A desired level of scenic quality and diversity of natural features based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape.

Preservation: In general, human activities are not detectable to the visitor.

Retention: Human activities are not evident to the casual Forest visitor.

Partial Retention: Human activities may be evident, but must remain subordinate to the characteristic landscape.

Modification: Human activity may dominate the characteristic landscape but must, at the same time, utilize naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in middle ground or background.

Maximum Modification: Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

Enhancement: A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists.

**VISUAL RESOURCE** The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

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**WALLOW** A depression, pool of water, or wet area produced or utilized by elk or moose during the breeding season.

**WATER YIELD** The measured output of the Forest's streams.

**WATER YIELD INCREASE** Additional water released to the Forest streams as a result of Forest management activities.

**WEEDING** Generally a cultural operation eliminating or suppressing undisturbed vegetation, mainly herbaceous, during the seedling stage of a forest crop, thus reducing competition with the seedling stand.

**WET AREAS** Sites, often occurring at the heads of drainages, such as wet sedge meadows, bogs, or seeps. They are often referred to as "moist sites" and are very important components of elk summer range. Sites near water are important because the forage they produce is highly nutritious and heavily utilized by elk.

**WETLANDS** Those areas that are inundated by surface or ground water with a frequency sufficient, under normal circumstances, to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands include marshes, bogs, sloughs, potholes, river overflows, mud flats, wet meadows, seeps, and springs.

**WILDERNESS** Federal land retaining its primeval character and influence without permanent improvements or human habitation as defined under the 1964 Wilderness Act. It is protected and managed so as to preserve its natural conditions which (1) generally appear to have been affected primarily by forces of nature with the imprint of man's activity substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and confined type of recreation; (3) has at least 5,000 acres or is of sufficient size to make practical its preservation, enjoyment, and use in an unimpaired condition, and (4) may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest.

**WILDERNESS STUDY** An analysis to determine an area's appropriateness, cost, and benefits for addition to the National Wilderness Preservation System.

**WITHDRAWAL** An order removing specific land areas from availability for certain uses.

**WORK YEAR EQUIVALENTS** This is 2,087 working hours. May be accomplished by one person EQUIVALENTS working yearlong or several people filling seasonal positions.

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**YARDING** The operation of hauling timber from the stump to a collecting point.

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**ZONE OF INFLUENCE** A delineated geographic area within which the present and proposed actions exert an important influence on residents and visitors.

# APPENDICES

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The following appendices are available on request or can be reviewed in the Flathead National Forest Supervisor's Office, Kalispell, Montana:

AA. Recreation Opportunity Spectrum (ROS) User's Guide
BB. Appendix to Management Area 18
CC. National Forest Landscape Management - Vol. II "The Visual Management System"
DD. Montana Cooperative Elk Logging Study
EE. Management Standards for Indicator Fish Species (Bull Trout, Cutthroat Trout) on the Flathead National Forest, 1985
FF. State of Montana Water Quality Standards
GG. Environmental Assessment of Nonwilderness National Forest Lands - Oil and Gas Leasing on Flathead National Forest
HH. Technical Guides for Soil Compaction
II. 10-Year Tree Improvement Program
JJ. Big Mountain Resort Area Master Plan, 1984
KK. The Limits of Acceptable Change (LAC) System for Wilderness Planning, 1985
LL. Wilderness Fire Plan, Phase II, for the Great Bear and Bob Marshall Wildernesses, 1983

# APPENDIX A

## RECREATION OPPORTUNITY SPECTRUM
## (ROS)
Flathead National Forest

## A. SETTING CHARACTERIZATION

### 1. PRIMITIVE

Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is minimal. The area is managed to be essentially free from evidence of human induced restrictions and controls. Motorized use within the area is not permitted.

### 2. SEMIPRIMITIVE NONMOTORIZED

Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum onsite controls and restrictions may be present but are subtle. Motorized use is not permitted.

### 3. SEMIPRIMITIVE MOTORIZED

Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum onsite controls and restrictions may be present, but are subtle. Motorized use is permitted.

### 4. ROADED NATURAL APPEARING

Area is characterized by predominately natural-appearing environments with moderate evidences of sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.

## B. EXPERIENCE CHARACTERIZATION

### 1. PRIMITIVE

Extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers a high degree of challenge and risk.

2. **SEMIPRIMITIVE NONMOTORIZED**

High, but not extremely high, probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.

3. **SEMIPRIMITIVE MOTORIZED**

Moderate probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Opportunity to have a high degree of interaction with the natural environment. Opportunity to use motorized equipment while in the area.

4. **ROADED NATURAL APPEARING**

About equal probability to experience affiliation with other user groups and for isolation from the sights and sounds of humans. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities associated with more primitive type of recreation are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and nonmotorized forms of recreation are possible.

## C. EVIDENCE OF HUMANS' CRITERIA

1. PRIMITIVE

Setting is essentially an unmodified natural environment. Evidence of humans would be unnoticed by an observer wandering through the area.

2. SEMIPRIMITIVE NONMOTORIZED

Natural setting may have subtle modifications that would be noticed but not draw attention of an observer wandering through the area.

3. SEMIPRIMITIVE MOTORIZED

Natural setting may have moderately dominant alterations but would not draw the attention of motorized observers on trails and primitive roads within the area.

4. **ROADED NATURAL APPEARING**

Natural setting may have modifications which range from being easily noticed to strongly dominant to observers within the area; however, from sensitive travel routes and use areas, these alterations would remain unnoticed or visually subordinate.

## D. MANAGERIAL SETTING CRITERIA

### 1. PRIMITIVE

Onsite regimentation is low with controls primarily offsite. Controls can be physical (such as barriers) or regulatory (such as permits).

### 2. SEMIPRIMITIVE NONMOTORIZED

Onsite regimentation and controls present but subtle.

### 3. SEMIPRIMITIVE MOTORIZED

Onsite regimentation and controls present but subtle.

### 4. ROADED NATURAL APPEARING

Onsite regimentation and controls are noticeable but harmonize with the natural environment.

# APPENDIX B

## OUTFITTER-GUIDE APPLICATION EVALUATION PROCEDURE

### Flathead National Forest

## A. PURPOSE

The purpose of this document is to provide direction for responding to the new outfitter-guide applications on the Flathead National Forest. This supplements the broader policies and procedures contained in Forest Service Manual 2720.

## B. NEED FOR EVALUATION PROCEDURES

The Ranger Districts on the Flathead National Forest are continually receiving inquiries from new prospective outfitters. No analysis of the situation has been done in order to respond in a consistent, objective, managed way. In recent years, public use patterns have changed, roaded access has increased, and generally a greater demand has been placed on all resources.

We see the need to develop a more systematic approach on responding to new outfitter-guide applications.

## C. OUTFITTER-GUIDE APPLICATION EVALUATION CRITERIA

1. Proposed use must be compatible with Forest Service Manual directions:
    a. FSM 2721.53 (a-d)
    b. FSM 2323.11d
2. Proposed use must be compatible with management direction in the Forest Plan and with other individual resources.

## D. SERVICE NEED OR PUBLIC CONCERN

1. Is there an existing "surplus" unused permitted outfitter capacity for the type of services proposed on the District or adjacent area?
2. Is the proposed service already being offered or provided in the general area by an outfitter?
3. Could this service be provided on private land?
4. Could an existing outfitter in the general area expand to provide the proposed service?
    a. Has an existing outfitter indicated a desire to provide the proposed service?
    b. Is there an existing outfitter in the area who is capable of providing the proposed service if there is an actual market for it?

5. Has there been a specifically identified general public concern in favor of or opposed to the provision of proposed additional or varying types of outfitter services?

    a. Is the proposed service one which is needed to meet specific identified public demands? Does the District have a file of requests that this service be provided?

    b. Has the appropriate State or Federal agency biologist identified a specific need for additional hunting or fishing pressure in the area, or have specific concerns regarding over harvesting been voiced?

    c. Have specific public concerns been raised as to outfitter use or density in a particular area?

E. COMPATIBILITY WITH EXISTING OR OTHER SCHEDULED USES OF THE AREA

1. Would the proposed use afford conflicts with existing outfitter use?

    a. Must provide adequate spacing between base camps, spike camps, and other outfitters.

    b. Camps shall be off and screened from system trails.

    c. Proposed grazing use may not conflict with current forage allocations.

2. Would the proposed use afford conflicts with existing nonoutfitted use?

    a. Proposed outfitter and guide base, spike, or progressive travel camps must be outside of specifically identified areas of concentrated use (refer to Glacier View Outfitter and Guide Map).

    b. Proposed outfitter and guide base, spike, or progressive travel camps must be outside of specifically identified areas of significant natural attraction.

    3. To avoid conflicts with nonoutfitter use of easily accessible areas, proposed outfitter and guide base or spike camps will not be permitted as designated on Glacier View Outfitter and Guide Map.

    Progressive travel camps of one night duration may be permitted by District Ranger if, in his opinion, this use affords no significant conflict with nonoutfitted use.

3. Is the proposed use (outside wilderness) compatible with other National Forest uses?

    a. Other uses - timber, gas and oil, research studies.

    b. Private landowners or other agencies.

4. Would the proposed use afford significant safety hazards to the applicant or his clients that are specific to the location, route, type of use, or season of use (i.e., avalanche hazard, white water, etc.)?

## F. PHYSICAL COMPATIBILTY WITH THE LAND OR RESOURCES OF THE AREA

1. Proposed camps must be in areas which have suitable physical characteristics, are resiliant and able to stand the proposed use, and must afford adequate space.
    a. Rocky or resiliant soils.
    b. Out of meadows or wet areas.
    c. Suitable location for toilets or corrals, if applicable.
    d. Are innovative methods not currently in common use proposed which will reduce the impacts of this use?
2. Does the proposal exclude traditional outfitting methods (horse-mule packing) in favor of innovative methods?
3. Proposed use must be away from specifically identified heavily impacted campsites.
4. Proposed uses may not conflict with identified winter range areas where fall, winter, or spring use is anticipated.
5. Does the proposed use require forage in areas where it is currently totally allocated or over grazing exists?
6. If proposal is for a road-end facility, will the use of the proposed facility reduce existing impacts or resource values in backcountry?

## G. FLATHEAD NATIONAL FOREST POLICY PERMIT REQUIREMENTS FOR OUTFITTER AND GUIDE ACTIVITIES

All outfitter activities which take place on, or utilize part of, the Flathead National Forest will be reviewed in advance by the appropriate District Ranger.

All outfitter activities, day use or overnight use, on the Flathead National Forest will be authorized by an outfitter-guide permit, as per FSM 2721.53.

# APPENDIX C

## TRAVEL PLANNING DIRECTION
Flathead National Forest

## A. POLICY

Provide the greatest possible level of public access commensurate with promoting public safety, protecting resources, and minimizing user conflicts. By means of a comprehensive review of proposed restrictions against defensible critieria, ensure that no more restrictions are imposed than are necessary, and that a balanced approach in managing motorized vehicles is achieved.

## B. CATEGORIES AND CRITERIA FOR CLOSURES OR RESTRICTIONS

Information in this section conveys the intent of the Forest's travel policy. Essentially, National Forest lands are open to all historic and conventional forms of travel, including but not limited to: foot, stock, and motor vehicles, unless specifically closed or restricted. Closures and restrictions may take many forms:

-- broad geographic areas (i.e., Jewel Basin),
-- closing specific facilities (i.e., a specific road or trail),
-- restricting use during a specific season (i.e., restricting activity in big-game winter range from December 1 to May 15), or
-- restricting specific types of vehicles (i.e., limiting motor vehicles to those less than 40" in width).

The following pages provide definitions and examples of four categories of closures or restrictions, along with reasons for imposing the restriction and criteria that will be used to determine the need to impose motorized use restrictions on areas or facilities.

### 1. CATEGORIES

a. Category One - Area Closures/Restrictions:

| Types of Areas | Reasons | Criteria |
|---|---|---|
| Wilderness | Mandated by law | Legislative closure to motorized use |
| Jewel Basin | Current management direction | Administrative closure |
| Land portion of Wild River segment outside of wilderness | Current management direction | Legislative closure |
| Coram Experimental Forest | Current management direction | Administrative closure to protect ongoing research and studies |
| Research Natural Areas | Management direction | Protection and research of unique resources. |

Category One (continued)

| Types of Areas | Reasons | Criteria |
|---|---|---|
| Special Areas | | |
| Big Mountain & environs | Management direction, public safety, resource protection | User safety; Danny On Trail is designed to foot use standards, and motorized use would cause resource damage. |
| Special Hunting Areas | Recreation opportunities | Simulate nonmotorized hunting experience in developed areas. |
| Cross-country Ski Areas | Recreation opportunities, public safety | Area with opportunities for all skill levels; area likely to be used; area accessible and with high probability of snow with minimum safety hazards (e.g., avalanches); area designed for cross-country ski opportunities. |
| Wildlife Management Area | Resource protection | Maintain essential habitat components for wildlife including Threatened and Endangered species; improve habitat by limiting disturbance in areas with reduced wildlife cover; minimize disturbance in identified winter range areas; minimize disturbance during nesting, calving, denning periods. Use of motorized vehicles will lead to loss of habitat effectiveness or failure to realize wildlife management objectives. |
| Public Water Supplies | Resource protection | Legislative restrictions |
| Special Resource Problem Areas | Resource protection | Use of motorized vehicles will prolong or compound existing resource problems (such as impacts to fish spawning habitat and impacts to water quality) or otherwise lead to long-term loss of productivity and failure to realize resource management objectives. |

NOTE: Areas closed to motorized use may have designated open routes through them. The type(s) of motorized use permitted on the open route is stated on the closure notice.

**b. Category Two - Travel Corridors:**

| Types of Areas | Reasons | Criteria |
|---|---|---|
| Aquatic | | |
| "Scenic" segment of Wild and Scenic River System | Management direction | Refer to Management Area 18 in Chapter III. |
| "Recreational" segment of Wild and Scenic River System - 10 HP limitation | Management direction | Refer to Management Area 18 in Chapter III. |
| Other River Segments (e.g., canoe-ways) * | Recreation opportunities | Minimum public safety hazards; provide unique recreation opportunity; accessible to public. |
| Lakes* | Recreation opportunities | As above |
| Roads | Resource protection: | |
| | soil/watershed | Support resource management objectives; land/soil types and erosion potential; excessive road density. |
| | Wildlife | Excessive open road density; other criteria as for Wildlife Management Areas. |
| | Public safety | Road design and standard; surface conditions seasonally hazardous. |

NOTE: Road restrictions affect closures to motorized vehicles greater than 40 inches in width unless closure notice states otherwise.

State law prohibits the operation of snowmobiles on paved roads.

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* Authority to restrict motorized use lies with the Montana Department of Fish, Wildlife and Parks.

c. **Category Three - Trails:**

| Types of Areas | Reasons | Criteria |
|---|---|---|
| National Recreation Trails | Resource protection, public safety, recreation opportunities | Intent of the enabling National Recreation Trail report; design standards; user conflicts. |
| General Forest Trails | Resource protection, public safety | Grizzly bear use areas; design standards; substandard structures. |
| Special Purpose Trails | Resource protection, public safety, recreation opportunities | Support resource management objectives; land/soil types and erosion potential;<br>design standards; user conflicts (both safety and social). |

d. Category Four - Emergency and Other Types of Restrictions

| Types of Areas | Reasons | Criteria |
|---|---|---|
| Unstable Roadbed | Resource protection, public safety, investment protection | Motorized vehicle traffic may cause damage to resources and to the facility. |
| Load, Weight, Length Height, Width Limitations | Resource protection, public safety, investment protection | Roads and bridges which have capacities less than statutory limits. |
| Special Circumstances | Resource protection, public safety | Resource management activities adjacent to Forest roads which conflict with or pose safety hazards to public use (e.g., volumes and types of traffic associated with logging activities, oil and gas exploration). Unusual or unique situations which cause unexpected concentrations of wildlife or changes in patterns of wildlife use. |

NOTE: Any closures or restricitons imposed outside of the travel planning process require advance public notice, usually 30 days, before the effective date EXCEPT IN EMERGENCY SITUATIONS OR UNUSUAL CIRCUMSTANCES when the date that the closure is needed cannot be determined in advance. In any event, the reason(s) for motorized use restrictions will appear in all public notices.

Generally restrictions in this category apply to motorized vehicles greater than 40-inches in width.

## 2. GENERAL CONSIDERATIONS

In addition to the criteria stated there are two general considerations that must apply to all closure or restriction recommendations:

a. Closures/restrictions should be compatible with the management plans and objectives of cost-share cooperators that have a vested interest(s) in the road, other agencies and ownerships, and adjacent Forests to the extent possible within travel planning and resource management objectives. (Generally, the Forest Service has jurisdiction in cost-share agreements.)

b. Closures/restrictions must be capable of being funded and enforced.

## 3. CLOSURE DATES

Closures/restrictions imposed on areas or facilities on Flathead National Forest lands over which the Forest Service has complete and total control, and which have been determined through the travel planning process, will conform to the following blocks of dates:

| Closure/Restriction | Reasons |
|---|---|
| Year Long | Legislative, administrative, wildlife security, soil and watershed protection, and public safety. |
| April 1 - July 1 | Primarily for spring wildlife protection (such as calving, grizzly bear movement), and soil and watershed protection. |
| September 1 - November 30 | Special permit hunting, soil and watershed protection, and grizzly bear denning activities. |
| October 15 - November 30 | General hunting. |
| December 1 - May 15 | Winter range, cross-country skiing, and soil and watershed protection. |
| April 1 to November 30 | To provide for grizzly bear security and travel corridors and still allow snowmobile access. |

NOTE: These dates do not apply to restrictions imposed for emergency situations or unusual circumstances (Category Four). It is also recognized that over time changing situations may create the need to modify these date blocks in order to meet the goals identified in the Forest Plan.

In keeping with the Forest's travel policy, to "provide the greatest possible level of access..." use discretion in considering back-to-back or overlapping blocks of dates.

## C. ADMINISTRATIVE EXCEPTIONS

To the extent possible, Forest management activities will be conducted at times that do not conflict with closure dates; however, occasional or sporadic use of facilities that are closed to the public will be necessary. Administrative exceptions are listed as follows:

1. Members of an organized rescue or firefighting force in the performance of an official duty.
2. Federal, State, and local law enforcement officers in the performance of official duty.
3. Road or trail maintenance personnel performing Level I maintenance inspections and road or trail maintenance operations necessary for the protection of soil and water resources and major road or trail investments.
4. Projects that require Forest Service, Montana Department of Fish, Wildlife, and Parks personnel, or other permitted users to travel long distances or move heavy equipment will sometimes dictate the need for administrative use. If extensive administrative use of a restricted facility must extend over a long period ot time, the general closure will be removed unless doing so creates a safety hazard.

NOTE: District Rangers must approve administrative uses in this category.

## D. IMPLEMENTATION

Line officers are responsible for ensuring that areas and facilities are closed/opened on designated dates. The direction in the Forest Plan provides the basis for timing and type of action needed to redeem this responsibility.

It is the Flathead National Forest's objective to have all area and facility closures/openings effectively implemented on specific, designated dates. DEVIATIONS OR EXCEPTIONS MUST BE EVIDENT TO THE PUBLIC. Appropriate public notices and media releases should state our authority for deviations by citing applicable CFR's. Reasons for temporary or permanent imposition or relief of restrictions must be documented, defensible, and open to public inspection and comment.

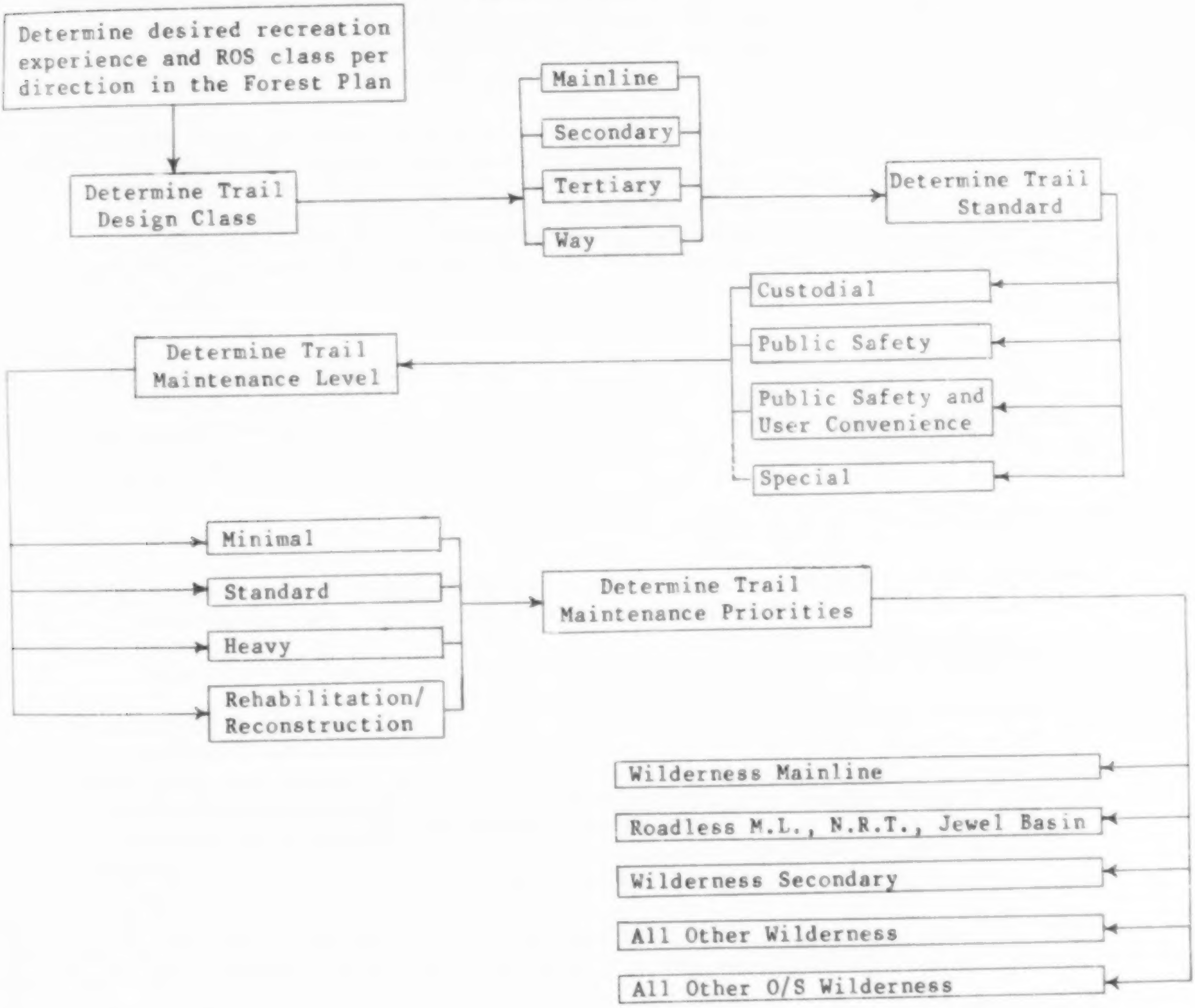
To facilitate public awareness of the Forest travel policy, a Forest Visitors Map will be prepared and updated as necessary.

# APPENDIX D

## TRAIL GUIDELINES AND MAINTENANCE PRIORITIES
## FLATHEAD NATIONAL FOREST

Trail management requires that trail design, standards, and maintenance be integrated in order to be responsive to the program management objectives, recreation experience levels, and recreation opportunity spectrum requirements presented in the Forest Plan. Trail management guidance needs to be uniform, simple, and readily understandable. The diagram presented below shows how trail management requirements are met.

Trail Management


Determine desired recreation experience and ROS class per direction in the Forest Plan
Determine Trail Design Class
Mainline
Secondary
Tertiary
Way
Determine Trail Standard
Custodial
Public Safety
Public Safety and User Convenience
Special
Determine Trail Maintenance Level
Minimal
Standard
Heavy
Rehabilitation/ Reconstruction
Determine Trail Maintenance Priorities
Wilderness Mainline
Roadless M.L., N.R.T., Jewel Basin
Wilderness Secondary
All Other Wilderness
All Other O/S Wilderness

## A. TRAIL DESIGN CLASSES

Trail design classes are as follows:

### 1. MAINLINE

A mainline trail is located and constructed for primary access providing unimpeded, convenient travel. It is safe for a wide range of user skill levels in all ROS classes. Annual or more frequent maintenance may be required.

### 2. SECONDARY

A secondary trail is located and constructed to provide secondary access and dispersion in primitive, semiprimitive nonmotorized, semiprimitive motorized, and roaded natural appearing ROS classes.* Users are expected to have the skills required for wild land travel in primitive and semiprimitive settings, but no unusual difficulties are presented. Maintenance may be annual or every second and third year.

### 3. TERTIARY

A tertiary trail is located and constructed to provide user dispersion or to lead to destinations or points of interest. This class of trail provides primitive, semiprimitive nonmotorized, and semiprimitive motorized ROS recreation experiences. Maintenance is provided as needed.

### 4. WAY

A way trail is a marked route for experienced hikers or horseback riders. It may disperse use or lead to points of interest. The ROS experience level provided is primitive. Maintenance is provided as needed.

## B. TRAIL STANDARDS

Trail standards are developed as a way of providing the recreation experiences of the ROS classes. These standards are as follows:

### 1. CUSTODIAL (RESOURCE PROTECTION)

Custodial care only is provided. The trail is kept minimally passable so users stay on trail tread. Minimal drainage structures are provided, protecting the resource by keeping them functional. Rocks and tree roots in the tread are part of the trail environment. Logs may be left that can be stepped over or driven around without causing resource damage. Signing may be deferred.

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* ROS classes are displayed in Appendix A.

### 2. PUBLIC SAFETY

The trail is kept in a safe condition. The trail is kept passable so users stay on trail tread. Trail tread kept in a safe condition. There are no unsafe logs or overhanging limbs. All drainage structures are kept in a functional condition. All structures are kept in a safe condition. Minimal signing is provided.

### 3. PUBLIC SAFETY AND USER CONVENIENCE

The trail is kept in a condition that provides for public safety and user convenience. The trail tread may be surfaced and is kept in a safe and smooth condition. No logs, overhanging limbs, or brush would be permitted within the trail corridor. All drainage structures are kept in a safe and functional condition. Structures are provided for convenience and kept in a safe condition. Adequate signing for user convenience is provided.

### 4. SPECIAL

The trail is kept at high standards for public safety, user convenience, and special users. The trail is usually surfaced, may be paved, and is kept in a safe and smooth condition. No logs, overhanging limbs, or brush occur within the trail corridor. All drainage structures are designed to prevent interference with users or their mode of transportation. Other structures and facilities are provided for user convenience and always kept in a safe condition.

## C. TRAIL MAINTENANCE LEVELS

Trail maintenance levels insure that the trails are maintained as necessary to meet the ROS objectives and the trail standards. The maintenance levels are as follows:

### 1. LEVEL 1 - MINIMAL

Minimal work is that needed to open the trail, make it simply passable, and protect the resource. Logging and brushing is done only enough so people stay on the trail tread. Trail upkeep and reshaping is done as necessary for proper drainage (cleaning waterbars and outdrains).

### 2. LEVEL 2 - STANDARD

Standard maintenance activities ensure that the resource and structures are functional and not likely to fail. Level 1 maintenance is performed and in addition the following:

- -- Clean trail of overhanging trees and limbs, logs, and brush.
- -- Clear treads of hazardous washouts, small slides, rocks, and tree roots; light repair of tread drainage structures.

- Staining and light repair of facilities and structures.
- Lightly repair and maintain bridges, culverts, and puncheons; replace serviceable structures not in excess of 30% of replacement costs.
- Maintain and replace trail markers and signs.
- Make necessary repairs to prevent further resource damage.

### 3. LEVEL 3 - HEAVY

Levels 1 and 2 maintenance are performed and in addition the following:

- Remove heavy downfall over a considerable distance.
- Replace trail washouts. Resurface trail where necessary.
- Replace washed-out drainage structures.
- Repair and maintain bridges, culverts, and puncheons, and replace serviceable structures not in excess of 50% of replacement costs.
- Install facilities or structures necessary to stop and/or repair resource damage.
- Do minor relocations.

### 4. LEVEL 4 - REHABILITATION/RECONSTRUCTION

Perform the following special maintenance activities as necessary:

- Blasting and rock removal.
- Cribbing and rock walling.
- Major "one-time" repairs to facilities or structures to restore them to safe and satisfactory condition. Cost may exceed 50% of current replacement costs.
- Major relocations.

## D. TRAIL MAINTENANCE PRIORITIES

Priorities for trail maintenance insure that the recreation experiences emphasized in this Forest Plan are provided for. The Flathead National Forest trails are categorized by trail maintenance priorities as follows:

1. Wilderness mainline trails, including access to and within wildernesses.

| Bob Marshall Wilderness | Ranger District* | Trail Standard** |
|---|---|---|
| Napa/South Lost/Gorge #31, #484, #218, #226, #107 | SB/SL | C |
| Smith/Little Salmon #29 | SB/SL | C |
| Lion/Little Salmon #25 | SB/SL | C |
| Holland/Gordon #35, #415 | SB/SL | C |
| Holland/Pendant/Big Salmon/Bartlett #35, #457, #110, #129 | SB/SL | C |
| Pyramid/Youngs #283, #141 | SB | C |
| Danaher #126 | SB | C |
| South Fork East and West #126, #80, #125, #35, #263 | SB | C |
| White River/Larch Hill Pass/White River Pass #112, 138 | SB | C |
| Spotted Bear River #83 | SB | C |
| Hahn Creek #125 | SB | C |
| Rapid Creek #139 | SB | C |
| Stadler Creek #271 | SB | C |
| Bowl Creek #324 | SB | C |
| Gateway Gorge #161, #332 | SB | C |
| Great Bear/Wilderness | | |
| Spotted Bear/Schafer #327 | SB | C |
| Morrison Creek #154 | HH/SB | C |
| Big River #155 | HH/SB | C |
| Granite Creek #156 | HH | C |
| Logan/Dirty Face #62 | HH | C |
| Stanton Lake #146 | HH | C |
| Marion Lake #150 | HH | C |
| Mission Mountains Wilderness | | |
| Glacier Lake #690 | SL | B |
| Cold Lakes #121 | SL | B |
| Meadow/Crystal/Elbow Ridge #351 | SL | B |

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* Ranger District abbreviations are: Spotted Bear - SB; Swan Lake - SL; Glacier View - GV; Hungry Horse - HH; and Tally Lake - TL.

** Trail Standard abbreviations are: Custodial - A; Public Safety - B; Public Safety and User Convenience - C; and Special - D

2. Mainline trails in roadless dispersed recreation areas, including Management Areas 2, 2A, 2B, 2C, 2D, and 2E, Jewel Basin Hiking Area, and National Recreation Trails.

| Jewel Basin (32 Miles) | Ranger District* | Trail Standard** |
|---|---|---|
| Krause Basin #5 | SL | B |
| Noisy Creek #8 | SL | B |
| Alpine #7 | SL/HH | C |
| Camp Misery #68 | SL | B |
| Mt. Aeneas #717 | SL/HH | C |
| Graves Creek #1 | HH | C |
| Tongue Mountain #55 | HH | C |
| Pioneer Lookout #71 | HH | C |
| Picnic Lakes #392 | HH | C |
| Clayton Creek #420 | HH | C |
| Jewell Lakes #718 | HH | C |
| Blackfoot Lakes #719 | HH | C |
| Twin Lakes #721 | HH | C |
| Big Hawk Lake #722 | HH | C |
| Wildcat #723 | HH | C |
| Crater Lake #198 | HH | C |
| Squaw Lake #417 | HH | C |
| Wheeler #64 | HH | C |
| Crater Notch #187 | SL | B |
| National Recreation Trails | | |
| Danny On #370 | TL | C |
| Elk Mountain #252 | TL | B |
| Griffin Creek #282 | TL | B |
| Ingalls Mountain/Silvia Lake #171 | TL | B |
| Lupine Lake #210 | TL | C |
| Tally Mountain/Bill Creek #163 | TL | B |
| Smokey Range/Whitefish Divide #270, #26 | GV | C |
| Blacktail Wild Bill ORV | GV | B |
| Holland Falls #416 (Pending) | SL | C |
| Continental Divide National Scenic Trail Corridor (see Page III-114) | HH/SB | - |

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* Ranger District abbreviations are: Spotted Bear - SB; Swan Lake - SL; Glacier View - GV; Hungry Horse - HH; and Tally Lake - TL.

** Trail Standard abbreviations are: Custodial - A; Public Safety - B; Public Safety and User Convenience - C; and Special - D

| Roadless Dispersed Recreation Areas | Ranger District* | Trail Standard** |
|---|---|---|
| 2A-Whitefish Divide Area | | |
| Elk Calf Mountain #382 | HH | B |
| Demers Ridge/Glacier Mountain #266, #381 | GV | C |
| Coal Ridge #14 | GV | B |
| 2B-Swan Range | | |
| Columbia Mountain #51 | HH | C |
| Alpine #7 | SL/HH | B |
| Glacier Slough #481 | SL | B |

3. Secondary wilderness trails, including access to and within wildernesses.

| Bob Marshall Wilderness | Ranger District* | Trail Standard** |
|---|---|---|
| Soup Creek #484 | SL | B |
| Miner Creek #81 | SB | B |
| Hahn Creek #100 | SB | B |
| Catchem Creek #259 | SB | B |
| Feline #213 | SB | B |
| Holbrook #131 | SB | B |
| Burnt #195 | SB | B |
| Strawberry #161 | SB | B |
| Clack #160 | SB | B |
| Cox #175 | SB | B |
| Switchback #177 | SB | B |
| Wall Creek #90 | SB | B |
| Picture Ridge/Hungry Creek #107 | SB | B |
| Mid Creek #103 | SB | B |
| Black Bear #220 | SB | B |
| Rambler Creek #524 | SB | B |
| Hodag Ridge #701 | SB | B |
| Garnet/Tango/Brownie Peak #111 | SB | B |
| Butcher Mountain #133 | SB | B |
| Gordon Peak #128 | SB | B |
| Gordon Mountain/Kid Mountain/Kid Lookout #628, #136 | SB | B |
| Ayres Creek #273 | SB | B |
| Cardinal Creek/Cabin Creek #506 | SB | B |
| Youngs Creek/Jenney Creek #141 | SB | B |
| Fool Hen #142 | SB | B |
| Danaher/Hahn Creek #265 | SB | B |

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* Ranger District abbreviations are: Spotted Bear - SB; Swan Lake - SL; Glacier View - GV; Hungry Horse - HH; and Tally Lake - TL.

** Trail Standard abbreviations are: Custodial - A; Public Safety - B; Public Safety and User Convenience - C; and Special - D

| | Ranger District* | Trail Standard** |
|---|---|---|
| Great Bear Wilderness | | |
| Sheep Creek #152 | HH | B |
| Twenty-Five Mile #159 | HH | B |
| Long Creek #166 | HH | B |
| Devil Creek #167 | HH | B |
| Bergsicker #217 | HH | B |
| Vinegar Mountain #260 | HH | B |
| Bradley Mountain #323 | HH | B |
| Charlie Creek #330 | HH | B |
| Ousel Peak #331 | HH | B |
| Cy Creek #332 | HH | B |
| Siefer #165 | HH | B |
| West Side Big River #214 | SB | B |
| Dolly Varden/Pentagon #173 | SB | B |
| Mission Mountain Wilderness | | |
| Jocko #34 | SL | B |
| Cedar/Piper #738 | SL | B |
| Hemlock #607 | SL | B |

4. All other wilderness trails, including access to and within wilderness. Maintenance priority Level 4 is not listed. The trail standards would be either custodial or public safety.

5. All other trails outside wildernesses. Maintenance priority Level 5 is not listed. The trail standards would be either custodial or public safety.

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* Ranger District abbreviations are: Spotted Bear - SB; Swan Lake - SL; Glacier View - GV; Hungry Horse - HH; and Tally Lake - TL.

** Trail Standard abbreviations are: Custodial - A; Public Safety - B; Public Safety and User Convenience - C; and Special - D

# APPENDIX E

## ALLOWABLE SALE QUANTITY AND TIMBER SALE PROGRAM QUANTITY (ANNUAL AVERAGE FOR FIRST DECADE)

### Flathead National Forest

| Harvest Method | Allowable Sale Quantity 1/ Sawtimber (MMCF) | Allowable Sale Quantity 1/ Other Products (MMCF) |
|---|---|---|
| Regeneration Harvest: | | |
| Clearcut and Seed Tree | 23.5 | 0 |
| Shelterwood | | |
| - Preparatory Cut | 0 | 0 |
| - Seed Cut | 0.5 | 0 |
| - Removal Cut | 0.4 | 0 |
| Selection | 0.3 | 0 |
| Intermediate Harvest: | | |
| Commercial Thinning | 0.2 | 0 |
| Salvage/Sanitation | 0.8 | 0 |
| Totals | 25.7 | 0 |

| | Additional Sales 2/ Sawtimber (MMCF) | Additional Sales 2/ Other Products (MMCF) |
|---|---|---|
| Totals for All Harvest Methods | 1.3 | 0.5 |

Allowable Sale Quantity 25.7 (MMCF) 100 (MMBF) 3/

Timber Sale Program Quantity 4/ 27.0 (MMCF) 108 (MMBF) 3/

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1/ Includes only chargeable volumes from suitable lands.

2/ Includes only nonchargeable volumes from suitable and/or unsuitable lands.

3/ Based on local unit of measure.

4/ Total of allowable sale quantity and additional sales.

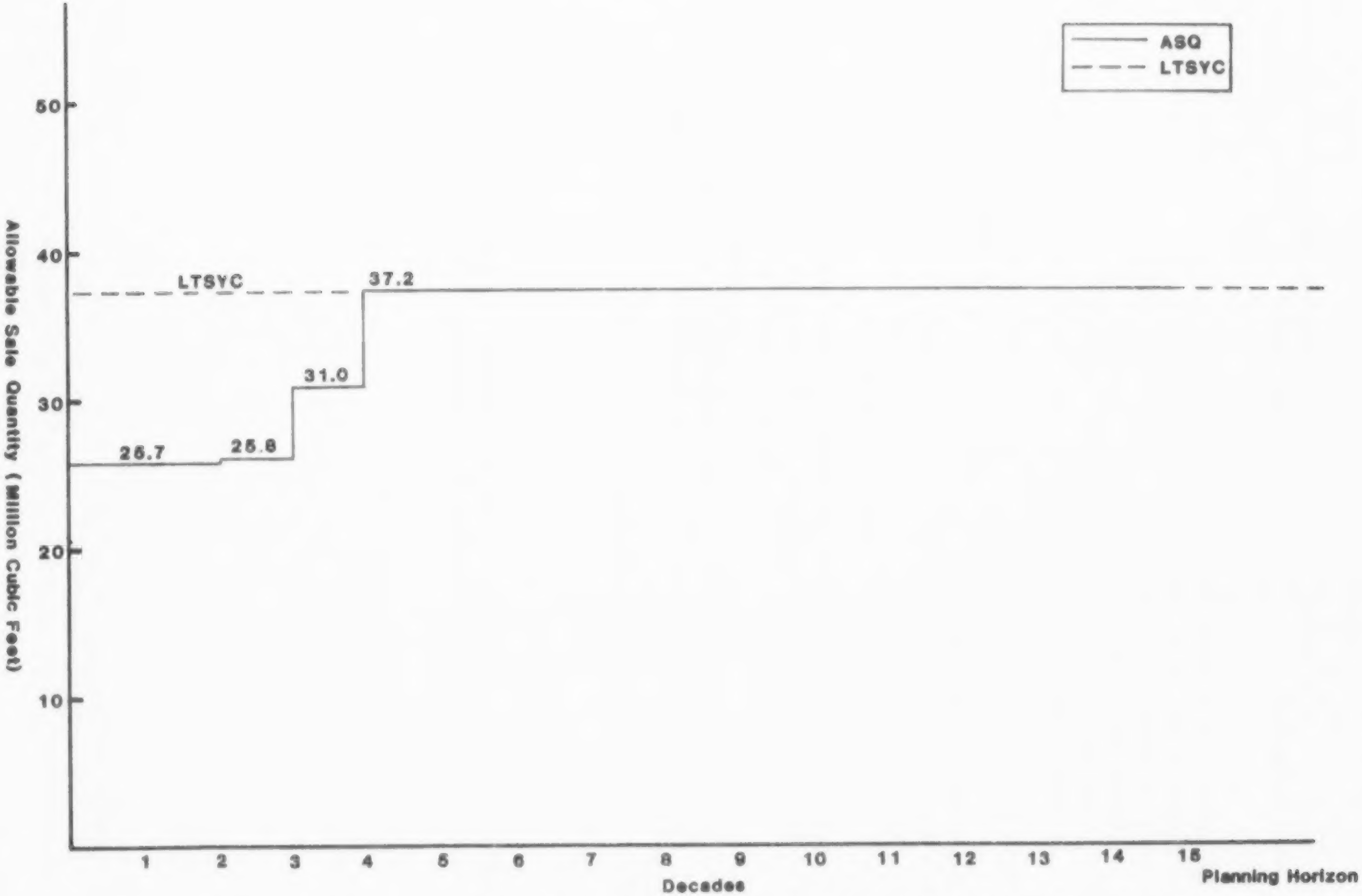

Figure E-1. Long-Term Sustained Yield and Allowable Sale Quantity
(Average Annual Volume)

Flathead National Forest

# APPENDIX F

## PRESENT AND FUTURE FOREST CONDITIONS
Flathead National Forest

TABLE F-1 - Present and Future Forest Conditions

| | Unit of Measure | Suitable Land | Unsuitable Land 2/ |
|---|---|---|---|
| Present Forest: Growing Stock | MMCF | 1503.4 | 3201.4 |
| | MMBF | 6013.6 | 11604.8 |
| Live Cull 2/ | MMCF | 294.0 | 1057.6 |
| | MMBF | 1029.0 | 3701.6 |
| Salvable Dead 2/ | MMCF | 267.0 | 1109.0 |
| | MMBF | 935.0 | 3168.8 |
| Annual Net Growth | MMCF | 26.0 | 40.2 |
| | MMBF | 104.0 | 140.9 |
| Annual Mortality 2/ | MMCF | 7.2 | 7.3 |
| | MMBF | 28.7 | 25.7 |
| Future Forest: Growing Stock | MMCF | 1491.8 | |
| Annual Net Growth | MMCF | 43.7 | |
| Rotation Age | Years | 80 1/ to 120 | |

| | Age Class | Present Forest | Future Forest |
|---|---|---|---|
| Age Class Distribution Acres (Suitable Lands) | 0- 39 | 120,400 | 261,750 |
| | 40- 79 | 205,270 | 301,220 |
| | 80-119 | 135,250 | 96,460 |
| | 120 + | 209,750 | 11,240 |

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1/ Average rotation age for regenerated stands on lands with timber emphasis by major forest types.

2/ Estimates are based on 1974 Timber Inventory statistics.

## Table F-2 - Summary of Timber Size Class for Suitable Commercial Forest Land

### Flathead National Forest

| Timber Size Class | Base Year 1980 | 1985 | 1995 | 2005 | 2015 | 2065 | 2115 | 2125 |
|---|---|---|---|---|---|---|---|---|
| | - - - - - - - - - Acres / Thousand - - - - - - - - - - - | | | | | | | |
| Nonstocked | 23.8 | 89.9 | 53.5 | 54.6 | 46.7 | 82.3 | 60.6 | 50.9 |
| Seedling-Sapling | 96.7 | 96.6 | 186.5 | 143.4 | 197.9 | 196.8 | 219.2 | 210.9 |
| Poles | 205.2 | 197.7 | 186.3 | 96.6 | 96.6 | 151.5 | 234.9 | 246.0 |
| Immature-Mature Sawtimber | 153.4 | 136.9 | 41.1 | 219.9 | 199.4 | 199.1 | 143.8 | 152.1 |
| Old Growth | 191.6 | 149.6 | 203.3 | 156.2 | 130.1 | 41.0 | 12.2 | 10.8 |
| Total | 670.7 | 670.7 | 670.7 | 670.7 | 670.7 | 670.7 | 670.7 | 670.7 |

NOTF: - Values may not add to total due to rounding.

# APPENDIX G

## FIRE MANAGEMENT DIRECTION
Flathead National Forest

## A. INTRODUCTION

The Flathead National Forest will provide for adequate resource protection and fire use necessary to protect, maintain, and enhance resource values and attain land management goals and objectives. Under direction established in the Forest Plan, fire management will be integrated with and support land management objectives.

The National Fire Management Analysis System is a formal process that will be used to integrate fire management planning with land management planning. The fire management direction established here will be used to guide the preparation of the National Fire Management Analysis System process. The Fire Management Analysis culminates in preparation of the Fire Management Action Plan which establishes and documents the fire programs that achieve fire management direction established here in the most cost-effective manner.

Because all Forest resources can be affected by fire, managers should carefully consider these basic concepts when forming plans, decisions, and actions.

Fire and effective fire suppression by land management agencies has played an important role in the development of current ecosystems on the Flathead National Forest. Some ecosystem components have been altered by the exclusion of wildfire.

Prescribed fire from both planned and unplanned ignitions can be used to achieve many land management objectives.

Fire management planning must consider fire application and ecological effects to provide all valid options for effective land management.

Esthetic, visual, soil, air and water quality concerns will dictate fire management direction in some areas.

Fuel buildup from effective fire suppression activity has increased catastrophic fire potential. The use of prescribed fire may be more expensive and complicated in areas of abnormal fuel buildup and species composition.

## B. FIRE MANAGEMENT DIRECTION

The following direction is to ensure that fire use programs are cost-effective, compatible with the role of fire in forest ecosystems, and responsive to resource management objectives:

1. Prescribe fire to maintain healthy, dynamic ecosystems that meet land management objectives.

2. Maintain an adequate cadre of well-qualified prescribed fire experts. Apply both technical knowledge and field experience in accomplishing prescribed fire needs.

3. Use existing fire management literature as reference documents to guide project development, execution, and evaluation.

4. Encourage field testing of ongoing research efforts in special wildlife habitat studies. Special considerations should be made to assist definition of key and critical habitat components and the effects of fire exclusion and prescribed fire.

5. Emphasize the use of prescribed fire in wildlife habitat improvement projects that maintain, restore, or improve critical habitat components.

6. Integrate an understanding of the role fire plays in regulating stand structure into the development of silvicultural prescriptions.

7. Use existing fire behavior predictive techniques to evaluate prescribed fire application and evaluate emerging wildfire ignitions.

8. Prescribed fire programs will be responsive to National, State, and local air quality regulations and agreements.

9. An active inform and involve program is necessary to ensure public involvement, understanding, and acceptance of prescribed fire programs.

10. Evaluate prescribed fire alternatives from a risk of escape and economic cost/benefit analysis when complex applications are planned.

11. Assure that the appropriate suppression response is applied to each wildfire ignition. The following suppression strategies outline the only appropriate responses to wildfire.

    a. **Control** (Control a Fire) - To complete the control line around a fire, any spot fires, and any interior islands to be saved; burn out any unburned area adjacent to the fire side of the control line; and cool down all hot spots that are immediate threats to the control line, until the line can reasonably be expected to hold under forseeable conditions.

    b. **Contain** (Contain a Fire) - To surround a fire and any spot fires with control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions.

    c. **Confine** (Confine a Fire) - To restrict the fire within determined boundaries established either prior to the fire, during the fire, or in an escaped fire situation analysis. Surveillance may be appropriate when the fire will be self-confined with a defined perimeter.

The following table (Table G-1) summarizes the suppression responses and prescribed fire options by individual management area. This information also summarizes the average annual acreage burned by wildfire as determined by the base level of Level II fire analysis, and the expected acres burned by prescribed fire.

Table G-1 - Summary of Fire Management Direction by Management Area
Flathead National Forest

| Management Areas | FIRE MANAGEMENT OPTIONS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Wildfire 1/ | | | | | Prescribed Fire 2/ | | |
| | Control | Contain | Confine | A/Burned | ı | Unplanned | Planned | A/Burned |
| 1 | X | X | X | 2 | ¶ | X | X | 50 |
| 2, 2A, 2B, 2C | X | X | X | 5 | ¶ | X | X | 50 |
| 2D, 2E, 2F | X | | | 0 | ¶ | | X | 0 |
| 3 | X | X | X | 0 | ¶ | X | X | 100 |
| 3A | X | | | 0 | ¶ | | X | 0 |
| 4 | X | | | 0 | ¶ | | X | 5 |
| 5 | X | | | 1 | ¶ | | X | 25 |
| 7, 7A | X | X | X | 5 | ¶ | | X | 200 |
| 8 | X | X | X | 1 | ¶ | | X | 25 |
| 9 | X | X | X | 1 | ¶ | | X | 100 |
| 9B | X | | | 0 | ¶ | | X | 0 |
| 10, 10A | X | | | 0 | ¶ | | | 0 |
| 11, 11A, 11B | X | X | X | 0 | ¶ | X | X | 250 |
| 11C | X | | | 0 | ¶ | | X | 50 |
| 12, 12A | X | | | 0 | ¶ | | X | 20 |
| 13, 13A, 13C, 13D | X | X | X | 5 | ¶ | | X | 500 |
| 13B | X | | | 0 | ¶ | | X | 0 |
| 14 | X | | | 0 | ¶ | | | 0 |
| 15, 15A, 15B, 15C | | X* | X* | 38 | ¶ | | | 3300 |
| 15D, 15E | X | X* | X* | 5 | ¶ | | X | 55 |
| 16, 16A, 16B, 16C | X | X* | X* | 5 | ¶ | | X | 560 |
| 17 | X | X* | X* | 0 | ¶ | | X | 50 |
| 18 | X | | | 1 | ¶ | | X | 5 |
| 19 | X | X | X | 1 | ¶ | X | X | 50 |
| 20 | X | X | X | 1 | ¶ | | X | 10 |
| 21, 22 | X | X | X | 20 | ¶ | X | X | 840 |

1/ Any wildland fire that requires a suppression response. All wildfires require an appropriate suppression response of control, confinement, or containment.

2/ A wildland fire burning under specified conditions which will accomplish planned objectives.

* Pre- and post-wildfire general season

## C. FIRE MANAGEMENT ANALYSIS

The National Fire Management Analysis System provides analytical methods to determine the most cost-effective fire program to accomplish fire management objectives established by the Forest Plan. This process provides input for land and resource management planning and Forest and Regional program development and budgeting.

1. **FOREST ANALYSIS** - The Forest process has three components which integrate with Forest Planning.

   a. **Level I** - The analysis of the Forest's fire management program under the current management situation.

   b. **Level II** - The formulation and analysis of fire management program options, functional mixes and/or budgets, to identify the most efficient program meeting the Forest Plan management direction.

   c. **Level III** - Procedures for developing and implementing the annual National Forest fire management program, including preparation of the Fire Management Action Plan.

2. **REGIONAL AND NATIONAL ANALYSIS** - The Regional and National process determines the kind, amount, and location of fire suppression forces and resources which are considered Regional or National in scope and are used but not planned or controlled by the Forest analysis; i.e., retardant planes, smokejumpers, etc.

3. **BUDGET ANALYSIS** - The budget analysis process identifies the most efficient unit distribution of fire protection funds at any given National or Regional budget level and documents the consequences in terms of expected annual Forest Fire Fighting (FFF) cost and net resource value changes.

# APPENDIX H

## LAND CLASSIFICATION SUMMARY
### Flathead National Forest

| Classification | | Acres |
|---|---|---|
| 1. Non-Forest land (includes water) | | 222,450 |
| 2. Forest land | | 2,139,632 |
| 3. Forest land withdrawn from timber production | | 519,741 |
| 4. Forest land not capable of producing crops of industrial wood | | 784,144 |
| 5. Forest land physically unsuitable: | | |
| -irreversible damage likely to occur | | 0 |
| -not restockable within 5 years | | 0 |
| 6. Forest land - inadequate information 1/ | | 0 |
| 7. Tentatively suitable Forest land (item 2 minus items 3, 4, 5, and 6) | | 835,747 |
| 8. Forest land not appropriate for timber production 2/ | | 165,077 |
| Acres by Management Emphasis: | | |
| MA 1 - Minimum Management | 12,565 | |
| MA 2 - Dispersed Recreation | 39,286 | |
| MA 3 - Amenity Values | 18,666 | |
| MA 11 - Grizzly Bear | 25,943 | |
| MA 11A - Grizzly Bear | 5,242 | |
| MA 12 - Riparian Wildlife | 40,188 | |
| Proposed Wilderness | 23,187 | |
| 9. Unsuitable Forest land (items 3, 4, 5, 6, and 8) | | 1,691,412 |
| 10. Total suitable Forest land (item 2 minus item 9) | | 670,670 |
| 11. Total National Forest land (items 1 and 2) | | 2,362,082 |

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1/ Lands for which current information is inadequate to project responses to timber management. Usually applies to low site lands.

2/ Lands identified as not appropriate for timber production due to: (a) assignment of other resource uses to meet Forest Plan objectives; (b) management requirements; and (c) not being cost efficient in meeting Forest Plan objectives over the planning horizon.

# APPENDIX I

## VEGETATION MANAGEMENT PRACTICES AND HABITAT TYPE GUIDELINES
Flathead National Forest

## A. VEGETATION MANAGEMENT PRACTICES

| Practice<br>(Annual Average in First Decade for Suitable Lands) | Acres |
|---|---|
| Regeneration Harvest: | 6,610 |
| Clearcut and Seed Tree | 6,225 |
| Shelterwood: | |
| - Preparatory Cut | 0 |
| - Seed Cut | 385 |
| - Removal Cut | 350 |
| Selection | 100 |
| Intermediate Harvest: | |
| Commercial Thinning | 175 |
| Salvage/Sanitation | 800 |
| Timber Stand Improvement | 3,400 |
| Reforestation 1/ | 6,610 |

All vegetative management practices on forested lands will be preceded by a silvicultural examination and prescription. The vegetation management practices available for each habitat type are defined below in the Habitat Type Guidelines. Where more than one vegatation management practice can by used in a habitat type, the prescription used would be decided on a case by case basis. The practice chosen would comply with management requirements listed in 36 CFR 219.27 (b), which state that each vegetation management practice shall:

(1) Be best suited to the multiple-use goals established for the area with potential environmental, biological, cultural resource, esthetic, engineering, and economic impacts, as stated in the regional guides and forest plans, being considered in the determination;

(2) Assure that lands can be adequately restocked as provided in paragraph (c)(3) of this section, except where permanent openings are created for wildlife habitat improvement, vistas, recreation uses and similar practices;

(3) Not be chosen primarily bacause they will give the greatest dollar return or the greatest output of timber, although these factors shall be considered;

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1/ Includes natural and artificial.

(4) Be chosen after considering potential effects on residual trees and adjacent stands;

(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources;

(6) Provide the desired effects on water quantity and quality, wildlife and fish habitat, regeneration of desired tree species, forage production, recreation uses, esthetic values, and other resource yields; and

(7) Be practical in terms of transportation and harvest requirements, and total costs of preparation, logging, and administration.

## B. HABITAT TYPE GUIDELINES

The following guidelines are intended to account for opportunities and limitations associated with the interaction of physical factors (topography, soil, climate, and weather) that define the vegetative potential of a site. Vegetative potential and limitations are described by recognizable plant communities classified into habitat types.

These guidelines apply to the habitat types in all Management Areas, unless the Management Area direction is more specific or deviation is supported by an environmental analysis. These guidelines are supplemental to those in the Northern Regional Guide and contain the reasons for the choices of various vegetation management practices for each vegetation type.

### 1. GROUP 1 - WARM AND DRY

| H.T.-PHASE | CODE | H.T.-PHASE | CODE |
|---|---|---|---|
| PP/Agsp | 130 | PP/Syal | 170 |
| PP/Feid | 140 | PP/Syal-Syal | 171 |
| PP/Feid-Feid | 141 | DF/Agsp | 210 |
| PP/Feid-Fesc | 142 | DF/Feid | 220 |
| PP/Putr | 160 | DF/Fesc | 230 |
| PP/Putr-Agsp | 161 | DF/Syal-Agsp | 311 |
| PP/Putr-Feid | 162 | DF/Caru-Agsp | 321 |

This habitat type group is characterized by open-grown ponderosa pine or Douglas-fir with a bunchgrass community typically dominating the understory. Some degree of tree stocking limitation occurs. This group is normally found at lower elevations on southerly aspects. Sites are warm and dry with shallow and/or rocky soils. Tree productivity is low, averaging about 30 cubic feet per acre per year in intensively managed stands. Occurrence of this habitat type group are very limited on the Flathead National Forest. The ponderosa pine series is found in greater abundance in the Flathead Valley.

a. **Timber**

This habitat type group is capable of commercial timber production. Soil moisture is a limiting factor. Silvicultural systems should emphasize conservation of soil moisture. Individual tree selection, group selection, and shelterwood regeneration systems will be used to maintain partial shade on the site. Clearcutting will usually not be used because of regeneration problems resulting from site exposure.

b. **Site Preparation**

Duff reduction generally is not necessary for regeneration. Site preparation objective should be for mineral soil exposure not to exceed 25% of the treated area with minimal surface soil displacement. Ten to fifteen tons per acre of large debris (4 inches plus) should be left onsite for nutrient cycling.

c. **Reforestation**

Minimum acceptable tree stocking level for regenerated stands is 100 established seedlings per acre and the desired stocking level is 150 trees per acre. Preferred species are ponderosa pine and Douglas-fir. Vegetative recovery is slow after soil disturbance.

d. **Protection**

Normally wildfires will be low intensity and fast spreading. Prescribed fire or managed wildfire is recommended periodically to control buildup of ground fuels and stimulate natural conditions. Understory recovery is rapid after a fire. Extensive overstocked stands of multistoried Douglas-fir over 50 years old are high risk for Douglas-fir tussock moth and spruce budworm. Also, they are high risk for root rot, bark bettle, and dwarf mistletoe. Pest prevention measures should emphasize mixed species stands, interspersion of stand ages, and stocking control.

e. **Wildlife**

This habitat type group is capable of big-game winter habitat and blue grouse breeding habitat. It provides permanent habitat for many of the grass/forb dependent wildlife species.

f. **Range**

This habitat type group is usually capable of providing excellent forage for domestic livestock use.

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g. **Water**

Precipitation averages less than 25 inches per year. Runoff averages 7 inches per year. Very limited streamflow originates in the area.

h. **Soil**

Often, the unit has shallow, rocky soil. Moisture available for plant growth is usually limited.

## 2. GROUP 2 - MODERATELY WARM AND DRY

| H.T.-PHASE | CODE | H.T.-PHASE | CODE |
|---|---|---|---|
| DF/Vaca | 250 | DF/Syal-Syal | 313 |
| DF/Phma | 260 | DF/Caru | 320 |
| DF/Phma-Phma | 261 | DF/Caru-Aruv | 322 |
| DF/Phma-Caru | 262 | DF/Caru-Pipo | 324 |
| DF/Syal | 310 | DF/Spbe | 340 |
| DF/Syal-Caru | 312 | DF/Vagl-Aruv | 282 |

Lower elevation stands of this habitat type group are mixed Douglas-fir and ponderosa pine with a shrub understory. This group will be found on all aspects. Pinegrass understories are normally confined to ridgelines or benches. With an increase in elevation or on some north slopes, ponderosa pine becomes less evident and lodgepole pine increases.

a. **Timber**

These habitat type groups are capable of moderate to moderately high timber productivity. Productivity is moderate with yield estimated to average 65 to 70 cubic feet per acre per year under intensive timber management. Group selection and shelterwood regeneration systems are normally used to maintain partial shade on the site.

Clearcutting is generally incompatible because the site exposure results in an environment too severe for successful tree regeneration. Individual tree selection will not provide for successful regeneration of ponderosa pine and fuel management is very costly, thus should be restricted to special situations where loss of species diversity and slash disposal costs can be accepted.

**b. Site Preparation**

Scarification is required for successful establishment of tree seedlings. Site preparation objective should be a maximum 30% mineral soil exposure with competing ground cover vegetation reduced 80%. From 10 to 15 tons per acre of large woody material (4-inch diameter and larger) should be left onsite for nutrient cycling. Machine scarification or prescribed burning may be used to achieve objectives if properly controlled. Herbicides may be used if identified as the preferred treatment in an environmental analysis.

**c. Reforestation**

Preferred species are ponderosa pine, Douglas-fir, western larch, and lodgepole pine. Shading is required for seedlings. Vegetative recovery is slow to moderate after soil disturbance. Minimum acceptable stocking level for regenerated stands is 200 established seedlings per acre with 300 trees per acre the recommended stocking level.

**d. Protection - Insect and Disease**

Extensive overstocked stands of multistoried Douglas-fir over 50 years old are high risk for Douglas-fir tussock moth and spruce budworm. They are also high risk for root rot, bark beetle, and dwarf mistletoe. Pest prevention measures should emphasize mixed species stands, interspersion of stand ages, and stocking control.

**e. Fire**

Wildfires are normally of moderate intensity with a moderate to high rate of speed. Prescribed fire or managed prescribed fire is recommended periodically to control build up of ground fuels and simulate natural conditions. Understory recovery is rapid after fire.

**f. Wildlife**

This habitat type group is capable of providing big-game winter range. Potential browse productivity is high. Elk calving areas and blue grouse breeding grounds are common. This group may provide spring habitat for grizzly bear.

**g. Range**

This habitat type group has moderate transitory forage potential for domestic livestock use.

#### h. Water

Precipitation averages from 25 to 35 inches per year, runoff averages 7 to 14 inches per year. Water production potential from vegetative manipulation is low to moderate.

#### i. Soil

This habitat type group often has shallow, rocky soil with low soil moisture-holding capacity. Conservation of surface soil moisture during site preparation and regeneration is needed. Care must be taken to minimize surface soil displacement.

### 3. GROUP 3 - MODERATELY COOL AND DRY

| H.T.-PHASE | CODE | H.T.-PHASE | CODE |
|---|---|---|---|
| DF/Xete | 270 | | |
| DF/Xete-Vagl | 271 | | |
| DF/Xete-Aruv | 272 | DF/Caru-Caru | 323 |
| DF/Vagl | 280 | DF/Cage | 330 |
| DF/Vagl-Vagl | 281 | GF/Xete | 510 |
| DF/Vagl-Xete | 283 | AF/Caru | 750 |

Stands in this habitat type group are dominated by Douglas-fir with minor amounts of ponderosa pine. Lodgepole pine is often significant, and grand fir may be significant in some stands. The understory is dominated by beargrass and huckleberry on all aspects and pinegrass on ridges or dry south slopes.

#### a. Timber

This habitat type group is capable of commercial timber production. This group is similar to Group 2 in productivity, averaging 70 cubic feet per acre per year under intensive timber management. Group selection and shelterwood regeneration systems will generally be used to conserve soil moisture. Clearcutting is restricted to northerly exposures and generally will not be used due to the infrequent occurrence of this group on north exposures on the Flathead National Forest. Individual tree selection is generally incompatible due to loss of tree species diversity and slash buildup.

#### b. Site Preparation

Scarification is usually required. Site preparation objectives are a maximum 40% mineral soil exposure with duff depths on at least 70% of area no more than 1 inch in depth. Ten to fifteen tons per acre of large woody material (4 inch diameter and larger) should be left onsite for nutrient cycling. Machine scarification or prescribed burning may be used to achieve objectives. Herbicides may be used if identified as the preferred treatment in an environmental analysis.

### c. Reforestation

Preferred species are ponderosa pine, western larch, Douglas-fir, and lodgepole pine. Acceptable species are grand fir, Engelmann spruce, and alpine fir. Shading is required for seedlings. Vegetative recovery is slow after soil disturbance. Minimum acceptable stocking level for regenerated stands is 200 established seedlings per acre and desired stocking level is 350 trees per acre.

### d. Protection - Insect and Disease

Extensive stands of lodgepole pine over 8 inches DBH are high risks for mountain pine beetles. Pest prevention measures should emphasize mixed species stands, interspersion of stand ages, and lodgepole pine as intermediate harvest species. Dwarf mistletoe is a potential problem in western larch and lodgepole pine stands.

### e. Fire

Wildfires are normally of moderate intensity with a moderate to high rate of spread. Prescribed fire is normally applicable only at final harvest. Understory recovery is moderate after fire.

### f. Wildlife

This habitat type group is often used as spring-fall feeding areas for big game.

### g. Range

Forage production for domestic livestock use is marginal on this habitat group.

### h. Water

Precipitation averages from 30 to 45 inches per year. Water production is moderately high, with average annual runoff of 10 to 21 inches per year. Potential for water production from timber harvest is low to moderate.

## 4. GROUP 4 - COOL AND MODERATELY DRY

| H.T.-PHASE | CODE | H.T.-PHASE | CODE |
|---|---|---|---|
| S/Vaca | 450 | AF/Libo-Vasc | 663 |
| AF/Vaca | 640 | AF/Vagl | 720 |
| AF/Vaca-Vaca | 641 | AF/Vasc-Caru | 731 |
| AF/Xete | 690 | MH/Xete | 710 |
| AF/Xete-Vagl | 691 | LP/Vaca | 920 |
| AF/Xete-Vasc | 692 | LP/Libo | 930 |
| | | LP/Vasc | 940 |

This habitat type group is characterized by essentially pure stands of lodgepole pine with an understory of beargrass, huckleberry, and grouse whortleberry. Heavy amounts of down material are common. Varying amounts of subalpine fir, Engelmann spruce, and Douglas-fir will be found in association with lodgepole pine on moist areas.

**a. Timber**

This habitat type group is capable of moderate productivity with estimated yields averaging about 70 to 75 cubic feet per acre per year under intensive timber management. Clearcutting, seed tree, and shelterwood are preferred regeneration systems, group selection is compatible. Individual tree selection is generally not compatible except in special areas, such as riparian areas, due to loss of species diversity and high slash disposal costs.

**b. Site Preparation**

Scarification is required for successful diverse tree species establishment. Site preparation objectives should be an exposure of no more than 60% mineral soil with duff depths on 70% of area averaging no more than 1 inch in depth. Eight to twelve tons per acre large woody material (4 inch diameter and larger) should be left onsite for nutrient cycling. Machine scarification or prescribed burning may be used to achieve objectives. In grizzly bear habitat, especially Density Zone 1, site preparation activites should consider increasing the production of huckleberry through burning, brush blading, and so on.

c. Reforestation

Preferred species are western larch, Douglas-fir, lodgepole pine, and Engelmann Spruce. Acceptable species are alpine fir and western white pine. Recovery is slow after soil disturbance. Minimum acceptable stocking levels are 250 established seedlings per acre, with a desired stocking level of 450 trees per acre.

**d. Protection - Insect and Disease**

Extensive stands of lodgepole pine over 8 inches d.b.h. are high risk for mountain pine bettle. Pest prevention measures should emphasize mixed species stands, interspersion of stand ages, and lodgepole pine as intermediate harvest species.

**e. Fire**

Wildfires are normally moderate to high intensity with a moderate rate of spread. Catastrophic fire potential is often common due to the bark beetle kill cycles in lodgepole pine and from fuel buildup associated with overstocked low value stands. To break up fuel continuity, emphasize mixed species stands, interspersion of stand ages, stocking control, lodgepole pine as intermediate harvest species, and rehabilitation of stagnated stands. Vegetative recovery is slow to moderate after fire.

### f. Wildlife

This habitat type group is primarily summer range and cover for big game. It also provides grizzly bear habitat.

### g. Range

This habitat type group provides moderate levels of transitory range forage for domestic livestock grazing.

### h. Water

Precipitation averages 40 to 50 inches per year. Water production from vegetative manipulation is moderately high with average annual runoff of 17 to 26 inches per year.

## 5. GROUP 5 - MODERATELY COOL AND MOIST

| H.T.-PHASE | CODE | H.T.-PHASE | CODE |
|---|---|---|---|
| DF/Libo | 290 | GF/Clun-Xete | 523 |
| DF/Libo-Syal | 291 | C/Clun | 530 |
| DF/Libo-Caru | 292 | C/Clun-Clun | 531 |
| DF/Libo-Vagl | 293 | C/Clun-Arnu | 532 |
| S/Clun | 420 | C/Clun-Mefe | 533 |
| S/Clun-Vaca | 421 | WH/Clun | 570 |
| S/Clun-Clun | 422 | WH/Clun-Clun | 571 |
| S/Libo | 470 | WH/Clun-Arnu | 572 |
| GF/Clun | 520 | GF/Libo-Libo | 591 |
| GF/Clun-Clun | 521 | GF/Libo-Xete | 592 |
| GF/Clun-Arnu | 522 | | |

This habitat type group represents areas where temperature and moisture approach optimum conditions within the forest community for vegetative growth. Stand composition varies from pure Engelmann spruce to mixtures of Douglas-fir, western larch, grand fir, western red cedar, and hemlock. Lodgepole pine is found in all of these habitat types; ponderosa pine is usually scarce. This habitat type group will be found on northerly slopes, stream bottoms, moist benches, and the lower portions of southerly aspects. Surface and subsurface soil compaction is a problem associated with the soils typical of this habitat type group. Mitigating measures must be used to minimize soil degradation.

### a. Timber

This habitat type group is capable of high timber productivity, with estimated annual yields of from 95 to 105 cubic feet per acre per year in intensively managed stands. All even-age silvicultural systems and group selection are applicable as dictated by stand condition. Individual tree selection is usually not compatible except in special areas due to loss of species diversity and inability to cope with fuel buildup.

**b. Site Preparation**

Minimal scarification is required. Site preparation objectives should be 50 percent maximum mineral soil exposure with duff depths not to exceed 1 inch on 50 percent of the area. Eight to twelve tons per acre large woody material should be left onsite for nutrient cycling. Machine scarification or prescribed burning may be used to accomplish objectives.

**c. Reforestation**

Preferred species are western larch, Douglas-fir, and lodgepole pine. Acceptable species are ponderosa pine, Engelmann spruce, western white pine, grand fir, alpine fir, and western red cedar. Recovery after soil disturbance is rapid. Minimum acceptable stocking levels are 350 established seedling per acre with 600 trees per acre the desired stocking level.

**d. Protection - Insect and Disease**

Heart rots are prevalent in overmature stands of grand fir and western red cedar. Root disease may be a problem in grand fir/Douglas-fir stands. This group has a moderate risk for Douglas-fir tussock moth and spruce budworm in large stands of grand fir-Douglas-fir over 50 years old. Moderate mountain pine beetle risk for stands over 8 inches d.b.h. to high risk for 80 year-old lodgepole pine over 8 inches d.b.h. Pest prevention measures should emphasize mixed species stands, interspersion of stand ages, and timely harvest of lodgepole pine and grand fir prior to reaching high risk stand age and structure. Presence of root disease should be analyzed prior to use of intermediate and shelterwood harvest.

**e. Fire**

Wildfires are normally intense with a slow to moderate spread. Prescribed fire normally is applied at final harvest, with underburning restricted to special stand conditions.

**f. Wildlife**

This habitat type group provides summer and winter range for mule deer and elk and permanent habitat for whitetailed deer below 4,500 feet elevation. Wildlife diversity is normally rich in species and numbers.

g. **Range**

This habitat type group has high potential for transitory forage for domestic livestock use.

h. **Water**

Water production is moderate to high with an average of 30 to 45 inches of precipitation per year and average annual runoff of 10 to 26 inches per year. Water production from vegetative manipulation is low to moderate.

## F. GROUP 6 - COOL AND MOIST

| H.T.-PHASE | CODE | H.T.-PHASE | CODE |
|---|---|---|---|
| AF/Clun | 620 | AF/Libo | 660 |
| AF/Clun-Clun | 621 | AF/Libo/Libo | 661 |
| AF/Clun-Arnu | 622 | AF/Libo | 662 |
| AF/Clun-Vaca | 623 | AF/Mefe | 670 |
| AF/Clun-Xete | 624 | AF/Alsi | 740 |
| AF/Clun-Mefe | 625 | MH/Mefe | 680 |
| | | AF/Luhi-Mefe | 832 |

Group 6 is found on moist northerly slopes, stream bottoms, and moist benches. Stands are composed of various mixtures of Douglas-fir, lodgepole pine, western larch, subalpine fir, and Engelmann Spruce.

a. Timber

This habitat type group is capable of high productivity, with an estimated average annual potential yield of 80 to 90 cubic feet per acre per year in intensively managed stands. All even-aged silvicultural systems and group selection are applicable as directed by stand condition. Individual tree selection is generally not compatible except in special areas due to loss of species diversity and inability to cope with fuel buildup. Surface and subsurface soil compaction is a problem associated with the soils typical of this habitat type group. Mitigating measures must be used to minimize soil degradation.

b. Site Preparation

Duff reduction and mineral soil exposure are necessary for adverse tree establishment. Site preparation objectives are 50% maximum mineral soil exposure with duff depths not to exceed 1 inch on at least 50% of the area. From 8 to 12 tons per acre of large woody material should be left onsite for nutrient cycling. Machine scarification or prescribed burning may be used to achieve objectives. Achieving the necessary reduction of litter with prescribed burning is often a problem due to infrequent occurrence of proper fuel moisture content and other burning conditions.

In grizzly bear habitat, especially Density Zone 1, site preparation activities should consider increasing the production of huckleberry by using prescribed fire. Herbicides may be used if identified as the preferred treatment in an environmental analysis.

### c. Reforestation

Preferred species are western larch, Engelmann spruce, Douglas-fir, western white pine, and lodgepole pine. Acceptable species are alpine fir and ponderosa pine. Recovery after soil disturbance is high. Frost damage to seedlings is often a problem resulting in sites becoming brushed in and suppressing seedlings even further. Careful design of clearcuts is necessary to prevent formation of frost pockets. Duff depths can also hinder regeneration, especially on steep slopes where broadcast burning must be used for site preparation. Minimum acceptable stocking levels are 250 established seedlings per acre with 550 trees per acre the desired stocking level.

### d. Protection - Insect and Disease

This habitat type group is low risk for Douglas-fir tussock moth and spruce budworm. However, it is high risk for mountain pine beetle in large lodgepole pine, white pine, and white bark pine stands 80 years old or older.

### e. Fire

Wildfires are infrequent but they are usually intense when they occur. Prescribed fire is difficult to apply due to infrequent occurrence of favorable burning conditions. Vegetative recovery is rapid to moderate after burning.

### f. Wildlife

This habitat type group primarily provides summer range for big-game species. Franklin and blue grouse are common. This group provides the best quality moose habitat on the Forest and is important for snowshoe hares and lynx. This habitat type group is also very important grizzly bear habitat.

### g. Range

This habitat type group has moderate to low potential for transitory summer forage for domestic livestock use.

### h. Water

From 40 to 60 inches average annual precipitation and 17 to 34 inches average annual runoff provide a moderately high potential water production from vegetative manipulation..

## 7. GROUP 7 - WET

| H.T.-PHASE | CODE | H.T.-PHASE | CODE |
|---|---|---|---|
| S/Egar | 410 | AF/Gatr-Gatr | 631 |
| S/Gatr | 440 | AF/Gatr-Caca | 632 |
| S/Smst | 480 | AF/Caca | 650 |
| C/Opho | 550 | AF/Caca-Caca | 651 |
| AF/Opho | 610 | AF/Caca-Gatr | 653 |
| AF/Gatr | 630 | AF/Caca-Vaca | 654 |

This habitat type group is characterized by soils that are saturated for periods of time sufficient to cause soil mottling. Various mixtures of subalpine fir, Engelmann spruce, Douglas-fir,' and lodgepole pine are common, with ponderosa pine rare. Stands are generally associated with streamside areas, wet benches, or the heads of drainages. Cold air ponding may be associated with this group. Soil rutting and puddling can also be a problem.

Understory components are highly variable in composition and density. Under a heavy timber canopy, the forest floor may be almost devoid of undergrowth. Temperature is often the limiting growth factor as the soils are moist year-round.

### a. Timber

This habitat type group is capable of moderate to high productivity with an estimated potential average yield of 80 to 90 cubic feet per acre per year possible in intensively managed stands. Silvicultural systems will be dictated by management emphasis and stand condition.

Individual tree selection and group selection will usually be emphasized due to frequency of association of this habitat group to special areas such as riparian or key wildlife habitat. Consideration of timber harvest effects on soil and water table will be necessary.

### b. Site Preparation

Duff reduction and exposure to sunlight are necessary to perpetuate seral species. The degree and type of site preparation will be dictated by which seral species are necessary to meet a management direction. Site preparation objectives are 60% maximum, 40% minimum exposure of mineral soil, and 50% maximum shade onsite for seral species. Little scarification is needed for climax species. Duff depths can hinder regeneration, especially for seral species. Machine scarification and prescribed fire are both difficult to apply due to moisture. Prescribed burning is preferred.

c. **Reforestation**

Preferred species are Douglas-fir, Engelmann spruce, lodgepole pine, and western larch. Acceptable species are alpine fir, western white pine, grand fir, and western red cedar. Frost damage and high water tables are often a problem. Soil moisture is not limiting. Recovery after soil disturbance is rapid. Minimum acceptable stocking level is 200 established seedlings per acre with 400 trees per acre the desired stocking level.

d. **Protection - Insect and Disease**

This habitat type group is usually low risk for most pests. Insects and disease risks are primarily related to stand conditions. Spruce beetle outbreaks can be expected in overmature spruce stands.

e. **Fire**

Wildfires are infrequent or rare. Prescribed fire is difficult due to moist environment. Vegetative recovery is rapid after fire.

f. **Wildlife**

Key habitat components for many wildlife species are associated with this habitat type group. Forage, cover, wallows, water, and reproduction habitat components are found here. Approximately 80 percent of the wildlife species occurring on the Flathead National Forest spend part or all of the year in these habitat types. Seeps and springs, used by elk for wallows, should be avoided by project activities. The structure of vegetative cover surrounding the wallow should be retained.

g. **Range**

In this habitat type group, forage potential for domestic livestock use is low. Cattle use must be carefully managed to prevent damage to riparian vegetation and conflicts with other resource values.

h. **Water**

Average annual precipitation is 40 to 60 inches, and average annual runoff is 17 to 34 inches. Potential for water production from vegetative manipulation is moderate to high.

8. **GROUP 8 - COLD AND MODERATELY DRY**

| H.T.-PHASE | CODE | H.T.-PHASE | CODE |
|---|---|---|---|
| AF/Vasc-Vasc | 732 | WBP-AF | 850 |
| AF(WBP)/Vasc | 820 | AL-AF | 860 |
| AF/Luhi | 830 | WBP | 870 |
| AF/Luhi-Vasc | 831 | | |

Stands in this habitat type group are likely to be highly variable in density and composition. This group is generally above the elevational limits of larch and Douglas-fir. Lodgepole pine is an important stand component on the lower elevations with whitebark pine and subalpine fir being the major species at higher elevations. Lesser amounts of Engelmann spruce and pockets of alpine larch are commonly found. Understories are variable with south slope stands typically open with scattered grouse whortleberry or beargrass. Often, bare soil or rock is exposed. Vegetative recovery on these sites is extremely slow. More mesic sites have a wider diversity of vegetation but recovery is still slow because of the short growing seasons.

a. **Timber**

This habitat type group is not capable of being managed for commercial timber production. Average annual potential production is less than 20 cubic feet per acre per year. Recovery rate after soil disturbance is very slow. Establishment of desirable tree stocking averages 10 years or more. Often 30 to 60 years is required for trees to reach 4.5 feet in height after establishment.

b. **Protection - Insect and Disease**

The major pest problem in this habitat type group is mountain pine beetle damage in mature whitebark pine stands and white pine blister rust in whitebark pine stands. Natural selection will eventually reduce blister rust occurrence to endemic levels. The group is low risk for producing mountain pine beetle epidemics due to the cold climate. However, heavy damage from epidemic beetle populations spreading from breeding sites at lower elevations can be sustained by existing susceptible stands.

c. **Fire**

Wildfire occurrence, intensity, and rate of spread is low. Fire management problems are associated with heavy ground fuel accummulations from insect or disease attacks. Opportunity for managing this buildup with natural fire prescriptions exists in this group.

d. **Wildlife**

This habitat type group contains favorite summering habitat for elk, key foraging, travel, and denning areas for grizzly bear, and mountain goat habitat.

e. **Range**

This habitat type group has no potential for forage production for use by domestic livestock.

### f. Water

Water yield is moderately high to very high with an average annual precipitation of 50 to 100 inches and average annual runoff is 26 to 69 inches. Potential for increasing water production is restricted to manmade structures.

# APPENDIX J

## CORRIDOR PLANNING
### Flathead National Forest

Areas of the Forest to be excluded from consideration for corridor allocation or facility siting are listed in Table J-1. Areas of the Forest that pose particular land use or environmental impacts which would be difficult or impossible to mitigate; i.e., avoidance areas, are also shown in Table J-1. The Avoidance Areas are shown because they are to be managed for: Research natural areas, primitive recreation setting, developed recreation, hiking area, and timber management with soil problems. Areas protected through legislative actions are also listed in Table J-1.

Table J-2 lists the Management Areas not excluded or which need not be avoided by utility corridors.

The criteria used for identifying corridor exclusion areas, avoidance areas, and windows is included as Exhibit J-1.

Areas defined as windows through the planning process are described below. They are shown on maps (Exhibit J-2). Existing transmission lines are shown on overlays (Exhibit J-3). Exhibits J-2 and J-3 are filed in the Flathead Forest Planning records.

Window No. 1 is located at the head of Yakinikak Creek on the Whitefish Divide. Transmission facilities could parallel the road across this constrained area. The impact of transmission facilities across this area would be mitigated most by being adjacent to the transportation facility. This window is in Corridor Segment R5 of the Pacific Northwest Long Range East-West Energy Corridor Study (PNLRE-WECS), Bonneville Power Administration, 1977. This area is constrained by management direction to maintain a semiprimitive nonmotorized recreation setting along the Whitefish Divide.

Window No. 2 is located at the head of Whale Creek to the Whitefish Divide. Transmission facilities could cross this area but would be more difficult to mitigate than Window No. 1 since there are no other facilities present. This window is also in Corridor Segment R5 of the PNLRE-WECS, BPA, 1977 report. This area is constrained by management direction to maintain a semiprimitive nonmotorized recreation setting along the Whitefish Divide.

Window No. 3 is located at the head of Red Meadow Creek across the Whitefish Divide. Transmission facilities could parallel the road across this constrained area. The impact of transmission facilities across this area would be mitigated most by being adjacent to the transportation facility. This area is constrained by management direction to maintain a semiprimitive nonmotorized recreation setting along the Whitefish Divide. This window could be reached from the east via the Red Meadow Creek drainage. It would necessitate a corridor to the west across State land plus Flathead and/or Kootenai National Forest land.

Window No. 4 is located just north of Werner Peak across the Whitefish Divide. Transmission facilities could cross this area and be mitigated fairly easily because roads already exist on both sides of and across the divide. This area is constrained by management direction to maintain a semiprimitive nonmotorized recreation setting along the Whitefish Divide. This window could be reached from the east via the Big Creek drainage. It would necessitate a corridor to the west across State and Burlington Northern land plus Flathead and/or Kootenai National Forest land.

Window No. 5 is located along the South Fork of the Flathead River between Hungry Horse Dam and the Flathead River. Two transmission lines (a 115 kv and a 230 kv) currently extend through this area. Additional facilities could be added without too much more impact. This area is constrained by the management direction to maintain a semiprimitive motorized recreation setting of this general area.

Window No. 6 is located along U.S. Highway 2 from Coram to Marias Pass. This window is constrained along much of its length by the Wild and Scenic River Corridor and intermittent pieces of National Forest land with management direction to maintain semiprimitive nonmotorized or semiprimitive motorized recreation settings. The Great Bear Wilderness, an exclusion area, is along the south side for nearly the entire length of this window. Glacier National Park, also an exclusion area, is along the north side for almost the entire length of this window. A 10-inch diameter natural gas pipeline currently parallels U.S. Highway 2 through this area. A main line of Burlington Northern Railroad also traverses this area. Another underground transmission facility through this area could be mitigated as well as the present pipeline, which has been done very well. An above-ground transmission facility would be more difficult to mitigate but it could be done to some degree.

Table J-1 Forest Plan Management Areas Which Exclude or Which Should be Avoided by Utility Corridors - Flathead National Forest

| Exclusion Areas | Management Area No. | Acres |
|---|---|---|
| Bob Marshall - Great Bear Wildernesses | 21 | 996,381 |
| Mission Mountains Wilderness | 22 | 73,573 |
| | Total | 1,069,954 |
| Avoidance Areas | | |
| 1. Where Corridors Conflict | | |
| Research Natural Areas | | |
| Le Beau | 2D & 2F | 857 |
| Swan River Island | 2E & 12A | 329 |
| Tuchuck | 11B | 1,586 |
| East Lake Shore | 3A | 448 |
| Little Bitterroot | 9B & 13B | 210 |
| Amenity Values | 3 | 40,304 |
| Grizzly Bear Management Areas | 11,11A | 97,294 |
| Administrative Sites | 10 | 1,268 |
| Developed Recreation Areas | 4 | 314 |
| Big Mountain Winter Sports Area | 20 | 3,574 |
| Condon Tree Improvement Area | 10A | 193 |
| Timber Management w/Soil Problems | 15A & 16A | 13,566 |
| Jewel Basin Hiking Area | 19 | 15,368 |
| Dispersed Recreation Areas | 2, 2A, 2B, 2C | 295,380 |
| | Total | 470,691 |
| 2. Protected Through Legislative Action | | |
| Wild and Scenic River | 18 | 13,838 |
| Coram Experimental Forest | 14 | 8,020 |
| NRT's (Included in Dispersed Recreation Areas Above) | | |
| | Total | 21,858 |
| | Grand Total | 1,443,403 |

**Table J-2** Forest Plan Management Areas Not Excluded From or Which Need Not Be Avoided by Utility Corridors - Flathead National Forest

| Management Area No. | Acres |
|---|---|
| 1 | 42,869 |
| 12 | 45,369 |
| 17 | 10,705 |
| 15, 15B - 15E | 514,806 |
| 16, 16B, 16C | 18,522 |
| 5, 7, 7A, 8 | 60,099 |
| 11C | 9,852 |
| 9, 13, 13A, 13C, 13D | 65,602 |
| Total | 767,824 |

## Exhibit J-1 - Criteria for Identifying Corridor Exclusion Areas, Avoidance Areas, and Windows in Montana - Flathead National Forest

The Utility-Transportation Corridor Study for Montana (November 1981) recommends a combined exclusion area, avoidance areas, and window concept for identifying and selecting corridors in Montana. The first step in this approach is to develop and agree on criteria for identifying these areas. The following defines each area and then list identification criteria. The criteria are designed for application to all lands; however, the USDI-Bureau of Land Management (BLM), USDA-Forest Service (FS), and State agencies will only apply the criteria on lands within their jurisdiction. Local governments and other Federal agencies have the option to consider these standards in their planning.

A. Exclusion Areas - Land areas determined to be unavailable for corridor allocation or facility siting.

- Include only those areas with a legal Congressional mandate that exclude linear facilities; i.e., National wilderness lands.

Jurisdiction - FS, BLM

B. Avoidance Areas - Land areas that pose particular land use or environmental impacts which would be difficult or impossible to mitigate. (May vary by type of facility.)

1. Areas where establishment and use of corridors conflict with land use/land management objectives.

Examples:

- Specially managed areas such as areas designated for developed and primitive recreation, research natural areas, environmental education areas.

- Environmentally sensitive areas (certain wildlife habitat areas, faults, wetlands, slump areas, etc.).

- Archeological and historical sites.

- Areas with specific visual objectives which conflict with facility placement.

- Active coal mining units.

Jurisdiction: FS, BLM, State

2. Areas with special or unique values that have been accorded specific and sometimes protected management status through "legislative" action. These values conflict with facility placement.

Exhibit J-1. Continued

Examples:

- National Recreation Areas (NRA)
- Wild, scenic, and recreational rivers.
- Nationally classified trails.
- State recreation areas.

Jurisdiction: FS, BLM, State

3. Areas which have been identified by local government bodies (within their areas of jurisdiction) as not suitable for the placement of linear facilities.

Examples:

- Urban residential areas.
- City parks.

Jurisdiction: Cities, Counties

C. Windows - Usually short, narrow passageways through constrained areas which are the most feasible potential locations for linear facilities, considering engineering and/or environmental factors.

Examples:

- Areas recognized as critical corridor segments because of physiographic or technical suitability.

Jurisdiction: FS, BLM, State, Counties

- Restricted passages identified as a result of allocation for exclusion or avoidance areas.

Jurisdiction: FS, BLM, State

- Existing critical corridor segments through sensitive areas, such as urban, residential areas or areas of intensive land use.

Jurisdiction: Mainly Counties, Cities, and State

# APPENDIX K

## PROJECTED BUDGET REQUIRED TO IMPLEMENT THE FOREST PLAN
(Average Annual in Thousands of Dollars for First Decade)
Flathead National Forest

| Fund in | 1978 Value | Current Value* |
|---|---|---|
| 00 General Administration | 1208 | 1812 |
| 01 Fire Protection | 615 | 923 |
| 02 Fuels Management | 142 | 213 |
| 03 Timber Prep/Admin. | 1234 | 1852 |
| 04 Timber Plans | 69 | 104 |
| 05 Silvicultural Exams | 261 | 392 |
| 06 Range | 36 | 55 |
| 07 Noxious Weeds | 2 | 4 |
| 08 Minerals | 256 | 384 |
| 09 Recreation | 812 | 1217 |
| 10 Fish/Wildlife | 352 | 528 |
| 11 Soil/Water | 424 | 636 |
| 12 Maintenance Facilities | 191 | 286 |
| 13 Special Uses | 67 | 101 |
| 15 Land Exchange | 79** | 119** |
| 16 Landline Location | 242 | 363 |
| 17 Road Maintenance | 738 | 1107 |
| 18 Trail Maintenance | 304 | 456 |
| 19 Coop Law Enforcement | 15 | 23 |
| 20 Reforestation - Appr | 171 | 257 |
| 21 TSI - Appr | 300 | 450 |
| 23 Tree Improvement | 44 | 67 |
| 24 Road Constr. - PE | 347 | 520 |
| 25 Senior Citizen Employ. Prog. | 22 | 32 |
| 26 Reforestation - K-V | 961 | 1441 |
| 27 TSI - K-V | 182 | 272 |
| 28 Other - K-V | 66 | 99 |
| 29 Coop Work Forest Service | 278 | 417 |
| 30 Salvage Sales | 76 | 115 |
| 31 Brush Disposal | 1110 | 1665 |
| 32 Range Betterment | 4 | 5 |
| 33 Recreation Construction | 88 | 133 |
| 34 Fire & Admin. Constr. | 42 | 62 |
| 35 Engineering Support | 1312 | 1968 |
| 36 Road Construction | 555 | 832 |
| 37 Trail Construction | 118 | 177 |
| 38 Timber Purchaser Credit | 1387 | 2081 |
| 42 Land Status | 29 | 43 |
| 43 Land Acquisition | 132 | 198 |
| TOTAL | 14271 | 21407 |

* Current value is 1.5 times the '78 value.
** Includes land classification

# APPENDIX L

## TIMBER PRODUCTIVITY CLASSIFICATION 1/
Flathead National Forest

| Potential Growth (Cubic Feet/Acre/Year) | Suitable Lands 2/ (Acres) | Unsuitable Lands 3/ (Acres) |
|---|---|---|
| Less than 20 | 0 | 1,006,594 |
| 20 - 49 | 0 | 102,446 |
| 50 - 84 | 40,241 | 534,564 |
| 85 - 119 | 442,642 | 27,319 |
| 120 - 164 | 187,787 | 20,489 |
| 165 - 224 | 0 | 0 |
| 225 + | 0 | 0 |

---

1/ Estimates based on 1974 timber inventory statistics.

2/ Based on the potential biological growth of natural stands, with no consideration given to stocking control or other intensive management practices.

3/ Productivity for wilderness where data not available is estimated.

[illegible]

[illegible]

| [illegible] | [illegible] | [illegible] |
|---|---|---|
| [illegible] | [illegible] | [illegible] |
| [illegible] |  | [illegible] |
| [illegible] | [illegible] | [illegible] |

[illegible]

# APPENDIX M

## 10-YEAR SCHEDULE OF MANAGEMENT ACTIVITIES
## Flathead National Forest

The following tabulation of management activities displays the preliminary strategy to be used by Flathead Forest personnel for accomplishment of the multiple-use objectives specified by this Plan. These activity schedules provide targets for monitoring the accomplishments which result from Forest Plan Implementation. This appendix lists dates, locations, and estimates the probable size of the projects based on the information available. These estimates are tentative and subject to change as site specific analysis and needs change during the first decade. Activity schedules are updated annually and they are available upon request. Fluctuations in timber sale offerings will be reflected in the proposed miles of road construction and reconstruction.

This appendix summarizes details of the proposed timber sale offerings including category of logging method. These categories were developed to model the anticipated costs of logging on particular landtypes or in special situations. They are not intended to prescribe a specific logging method; the project analyses will do that based on more site specific information. For example, approximately 229,000 acres of suitable Forest land with high potential for soil compaction were modeled as requiring 1,000-foot skyline logging systems (Sky 1) to reflect the increased costs associated with harvesting timber on these areas. These lands could be harvested by utilizing dedicated skid trails, restricted tractor logging seasons, or skyline systems, depending upon the recommendation of the project analysis. Although these acres were modeled as "Sky 1," they will not necessarily be harvested using skyline equipment.

Timber management activities are scheduled on steeper slopes and in largely undeveloped areas to achieve the resource management goals and objectives of this Forest Plan. This requires an increase over the historic level in the use of skyline logging methods and longer yarding distances. This is accompanied by a decrease in the amount of area harvested with tractor methods. It is the intent of Flathead Forest management to develop a viable, continuing skyline program. Forest Service personnel will work with industry representatives to implement and maintain the use of these systems.

Appendix M consists of seven parts:

A. Recreation, Wilderness, and Wild and Scenic Rivers Activities
B. Visual Quality
C. Range Management Activities
D. Fish and Wildlife Management Activities
E. Soil and Watershed Improvement
F. Ten-Year Timber Sale Offerings
G. Timber Stand Improvement Schedule

## A. TEN-YEAR RECREATION, WILDERNESS, AND SCENIC RIVER ACTIVITIES

### 1. TRAIL CONSTRUCTION/RECONSTRUCTION

Listed below are the trails on the Flathead National Forest that have priority for reconstruction or construction work. Trail condition surveys will be conducted annually on highest priority trails to determine segments to be constructed or reconstructed annually.

| District | Trail Name | Trail Number |
|---|---|---|
| Swan Lake | Alpine | 7 |
| | Lion Cr. Palisade | 25 |
| Spotted Bear | Stadler Cr. | 271 |
| | Bowl Cr. | 324 |
| | Molly Cr. | 138 |
| | Larch Hill | 112 |
| | Strawberry Cr. | 161 |
| | Gateway Gorge | 322 |
| | Little Salmon Cr. | 29 |
| Spotted Br/Hgry Horse | Big River | 155 |
| Hungry Horse | Columbia Mtn. | 51 |
| | Granite Cr. | 156 |
| Hgry Horse/Swan Lk | Alpine | 7 |
| Glacier View | Ralph L. Thayer Memorial | 26 |
| Tally Lake | Sanders Mtn. | 172 |
| | Tally Ridge | 458 |
| | Tally Gorge | 294 |
| | Reid Cr. | 215 |
| | Tally Mtn. | 163 |
| | Bill Cr. NRT | |
| | Elk Mtn. | 252 |

Forest Total Trail Construction/Reconstruction (FY 1986-95) - 51 Miles

## 2. DEVELOPED RECREATION FACILITIES CONSTRUCTION/RECONSTRUCTION

| District/Geog. Unit | Facility Name | Type of Mgmt. Activity | FY |
|---|---|---|---|
| SLRD/Upper Swan | Holland Lake Campground | Road Improvement | 1987 |
| | Lindberg Campground | Road and Campground Rehabilitation | 1989 |
| HHRD/West Side | Lost Johnny Campground | Road Improvement | 1987 |
| | Abbot Bay Campground | Road Improvement | 1987 |
| | Graves Cr. Picnic Area | Road Improvement | 1988 |
| GVRD/Big Creek | Big Cr. Campground | Campground Rehabilitation | 1987 |
| TLRD/Tally Lake-Round Meadow | Tally Lake Campground | Campground Rehabilitation | 1987 |

## 3. DISPERSED RECREATION FACILITIES

| District/Geog. Unit | Facility Name | Constr/ Reconstr. | FY |
|---|---|---|---|
| SB/South Fork | Trailhead and River Access | | |
| | Meadow Cr. Gorge Trailhead | Constr. | |
| | Crossover Boater Access | Constr. | 1986 |
| SB/South Fork | SF River Access | Constr. | 1986 |
| SB/South Fork | Cedar Flats River Access | Constr. | 1987 |
| HH/Bear Cr- Challenge Cabin | Bear Cr. Trailhead | Constr. | 1986 |
| HH/Middle Fork | Paola River Access | Constr. | 1986 |
| HH/West Side | Jewel Basin Trail Head Access Sites | Constr. | 1987 |
| HH/Columbia Mtn. | Columbia Mtn. Trailhead | Constr. | 1988 |
| HH/Lake Five | West Glacier River Access | Constr. | 1988 |

## B. VISUAL QUALITY MANAGEMENT ACTIVITIES

| District/Geog. Unit | Type of Activity | Acres | FY |
|---|---|---|---|
| Hungry Horse RD | | | |
| | Road 895 - Timber Sale | 625 | 1986 |
| | Road 895 - Timber Sale | 625 | 1991 |
| | Road 895 - Timber Sale | 625 | 1995 |

## C. RANGE MANAGEMENT ACTIVITIES

| Allotment Name | Average Annual AUM | Geog. Unit | Acres |
|---|---|---|---|
| Swan Lake Ranger District | | | |
| Krause #107 | 220 | Noisy Face | 3,340 |
| Potter #101 | 67 | Island | 4,500 |
| Wild Bill #102 | 302 | Island | 8,710 |
| Browns Meadow #104 | 208 | Island | 3,940 |
| Pine Prairie #105 | 152 | Island | 1,250 |
| Welcome Springs #108 | 42 | Island | 7,770 |
| Kerr Mountain #116 | 82 | Island | 4,410 |
| Sheldon #106 | 86 | Island | 4,610 |
| Piper Creek #109 | 148 | Upper Swan | 4,740 |
| Lion Creek #110 | 60 | Upper Swan | 5,910 |
| Smith Creek #111 | 36 | Upper Swan | 5,230 |
| Elk Creek #112 | 22 | Upper Swan | 2,840 |
| Glacier Creek #113 | 78 | Upper Swan | 6,360 |
| Barber Creek #114 | 67 | Upper Swan | 5,014 |
| Holland #115 | 90 | Upper Swan | 11,700 |
| Glacier View Ranger District | | | |
| Moran | 33 | Big Creek | 520 |
| Moran | 55 | North Fork | 863 |
| Tally Lake Ranger District | | | |
| Swaney | 340 | Sylvia Lake | 5,980 |
| Swaney | 1,030 | Star Meadow - Logan Creek | 17,995 |
| Chinook Lake | 110 | Tally Lake-Round Meadows | 2,644 |
| Herrig Creek | 36 | Upper Griffin | 5,615 |
| Island Meadow | 151 | Upper Griffin | 8,343 |
| Squaw Meadow | 225 | Upper Griffin | 7,705 |

## D. FISH AND WILDLIFE MANAGEMENT ACTIVITIES

1. **WILDLIFE HABITAT IMPROVEMENT** - Projects include threatened and endangered species habitat improvement. Acres total more than budget targets to allow for a pool of potential projects to be evaluated annually for treatment priorities.

| Practice | Geograhic Unit | Acres |
|---|---|---|
| Swan Lake Ranger District | | |
| Wildlife Opening | Noisy Face | 100 |
| Prescribed Burning | Noisy Face | 250 |
| Browse Clipping | Noisy Face | 100 |
| Prescribed Burn | Upper Swan | 320 |
| Browse Clipping | Upper Swan | 100 |
| Wildlife Planting | Lower Swan | 20 |
| Browse Clipping | Lower Swan | 100 |
| Prescribed Burn | Island | 50 |
| Selected Timber Sale KV Projects* | District-wide | 1,500 |
| Spotted Bear Ranger District | | |
| Nesting Structures | District-wide | 10 |
| Wildlife Planting | District-wide | 185 |
| Wildlife Structures | District-wide | 45 |
| Wildlife Opening | South Fork | 300 |
| Waterfowl Planting | South Fork | 85 |
| Prescribed Burn | South Fork | 600 |
| Prescribed Burn | Bunker Creek | 250 |
| Wildlife Planting | Bunker Creek | 50 |
| Prescribed Burn | Spotted Bear River | 215 |
| Prescribed Burn | Sullivan Creek | 550 |
| Selected Timber Sale KV Projects* | District-wide | 2,450 |
| Hungry Horse Ranger District | | |
| Nesting Structures | District-wide | 5 |
| Wildlife Planting | District-wide | 350 |
| Wildlife Structures | District-wide | 45 |
| Prescribed Burn | Middle Fork | 250 |
| Prescribed Burn | Bear Creek - Challenge Cabin | 450 |
| Wildlife Opening | Lake Five | 150 |
| Wildlife Opening | Emery Creek | 330 |
| Prescribed Burn | Emery Creek | 400 |
| Prescribed Burn | East Side | 325 |
| Prescribed Burn | West Side | 100 |
| Selected Timber Sale KV Projects* | District-wide | 2,350 |

## 1. WILDLIFE HABITAT IMPROVEMENT (Continued)

| Practice | Geographic Unit | Acres |
|---|---|---|
| **Glacier View Ranger District** | | |
| Wildlife Planting | Trail Creek | 5 |
| Wildlife Planting | Whale/Coal | 5 |
| Prescribed Burn | Whale/Coal | 100 |
| Wildlife Opening | Whale/Coal | 10 |
| Wildlife Planting | Big Creek | 5 |
| Prescribed Burn | Big Creek | 200 |
| Wildlife Opening | Big Creek | 10 |
| Wildlife Planting | Canyon/Teakettle | 5 |
| Prescribed Burn | Canyon/Teakettle | 40 |
| Prescribed Burn | North Fork Valley | 20 |
| Wildlife Opening | North Fork Valley | 50 |
| Selected Timber Sale KV Projects* | District-wide | 1,000 |
| **Tally Lake Ranger District** | | |
| CNB Nest Box | Sylvia Lake | 20 |
| CNB Nest Box | District-wide | 300 |
| CNB Nest Post | District-wide | 300 |
| Pot Hole Blasting-Wet Meadows | Various Locations | 10 |
| Winter Range Burn | Olney-Martin Creek | 76 |
| Winter Range Burn | Round Meadow | 30 |
| Winter Range Burn (understory | Round Meadow | 60 |
| Planting Desirable Browse | Round Meadow | 100 |
| Wildlife Planting | Round Meadow | 3 |
| Wildlife Planting | Silvia Lake | 6 |
| Wildlife Planting | Mountain Meadow-Rhodes Draw | 2 |
| Wildlife Planting | Upper Griffin | 2 |
| Planting Aspen, Cottonwood, Willow - Rip. WL | District-wide | 100 |
| Osprey Platform Nest Struct. | Selected Lake Sites | 6 |
| Duck Nesting Platforms, boxes | Selected Lake Sites | 15 |
| Streambank Rehabilitation | Upper Griffin | 8 |
| Meadow Rehab. (fencing) | Sylvia Lake | 640 |
| Selected Timber Sale KV Projects* | District-wide | 300 |

* Estimate of potential projects based on past experience.

## 2. FISHERIES HABITAT IMPROVEMENT

| Treatment | Geograhic Unit | Acres |
|---|---|---|
| Swan Lake Ranger District | | |
| Bank Stabilization and Pool Development Maintenance | Upper and Lower Swan (Elk, Kraft, Lion, Goat) | 30 |
| Bank Stabilization and Maintenance | Upper and Lower Swan (Squeezer, Elk, Glacier, Lion, Goat) | 55 |
| Spawning Habitat Improvement | Upper Swan (Holland Lk.) | 3 |
| Pool Development Structures | Upper and Lower Swan | 50 |
| Bank Stabilization and Maintenance | Island | 27 |
| Spotted Bear Ranger District | | |
| Planting Mud Flats | South Fork | 10 |
| Pool Development, Bank Stabilization, and Maintenance | South Fork | 65 |
| Bank Stabilization and Maintenance | Spotted Bear River | 34 |
| Spawning Area Improvement | Spotted Bear River | 2 |
| Bank Stabilization | Sullivan Creek | 20 |
| Hungry Horse Ranger District | | |
| Pool Development, Bank Stabilization, and Maintenance | Bear Creek-Challenge Cabin | 36 |
| Planting Mud Flats | South Fork | 12 |
| Pool Development, Bank Stabilization, and Maintenance | Eastside, Westside | 50 |
| Bank Stabilization | Emery | 20 |
| Glacier View Ranger District | | |
| Pool Development, Bank Stabilization, and Maintenance | Trail Creek, Whale-Coal, Big Creek, Canyon-Teakettle | 144 |
| Tally Lake Ranger District | | |
| Pool Development, Bank Stabilization, and Maintenance | District-wide | 140 |
| Spawning Area Improvement | Star Mdw.-Logan Cr., Olney-Martin, Sylvia Lake | 12 |
| Forest Total | | 710 |

## E. SOIL AND WATERSHED IMPROVEMENT

| Ranger District | Practice | Acres |
|---|---|---|
| Swan Lake (District-wide) | Soil and streambank stabilization in closed timber sale areas. | 200 |
| | Stabilize streambanks and soil movement areas, stabilize and drain substandard roads and trails. | 20 |
| Spotted Bear (District-wide) | Soil and streambank stabilization in closed timber sale areas. | 100 |
| | Stabilize streambanks and soil movement areas, stabilize and drain substandard roads and trails. | 20 |
| Hungry Horse (District-wide) | Soil and streambank stabilization in closed timber sale areas. | 250 |
| | Stabilize streambanks and soil movement areas, stabilize and drain substandard roads and trails. | 40 |
| Glacier View (District-wide) | Soil and streambank stabilization in closed timber sale areas. | 300 |
| | Stabilize streambanks and soil movement areas, stabilize and drain substandard roads and trails. | 50 |
| Tally Lake (District-wide) | Soil and streambank stabilization in closed timber sale areas. | 580 |
| | Stabilize streambanks and soil movement areas, stabilize and drain substandard roads and trails. | 60 |
| Forest Total | | 1620 |

## G. TIMBER STAND IMPROVEMENT

| Practice | Geographic Unit | Acres |
|---|---|---|
| Swan Lake Ranger District: | | |
| Precommercial Thinning | Island | 672 |
| Sanitation | Island | 303 |
| Precommercial Thinning | East Shore | 319 |
| Sanitation | East Shore | 23 |
| Precommercial Thinning | Noisy Face | 462 |
| Weeding and Liberation | Noisy Face | 25 |
| Pruning | Lower Swan | 27 |
| Precommercial Thinning | Lower Swan | 653 |
| Sanitation | Lower Swan | 34 |
| Weeding and Cleaning | Upper Swan | 73 |
| Sanitation | Upper Swan | 481 |
| Precommercial Thinning | Upper Swan | 1,872 |
| | | 4,944 |
| Spotted Bear Ranger District: | | |
| Precommercial Thinning | South Fork | 1,280 |
| Precommercial Thinning | Spotted Bear River | 305 |
| Precommercial Thinning | Sullivan Creek | 900 |
| | | 2,485 |
| Hungry Horse Ranger District: | | |
| Precommercial Thinning | Westside | 2,340 |
| Precommercial Thinning | Eastside | 1,830 |
| Precommercial Thinning | Emery Creek | 1,280 |
| Precommercial Thinning | Lake Five | 640 |
| | | 6,090 |
| Glacier View Ranger District: | | |
| Precommercial Thinning | Trail Creek | 165 |
| Precommercial Thinning | Whale Creek | 8,110 |
| Precommercial Thinning | Big Creek | 3,342 |
| Precommercial Thinning | North Fork Valley | 2,286 |
| Precommercial Thinning | Canyon-Teakettle | 1,211 |
| | | 15,114 |

## TIMBER STAND IMPROVEMENT (continued)

### Tally Lake Ranger District:

| | | |
|---|---|---|
| Precommercial Thinning | Olney-Martin Creek | 700 |
| Precommercial Thinning | Upper Good Creek | 1,800 |
| Precommercial Thinning | Sylvia Lake | 360 |
| Precommercial Thinning | Star Meadow-Logan Creek | 1,620 |
| Precommercial Thinning | Tally Lake-Round Meadow | 360 |
| Precommercial Thinning | Mountain Meadow-Rhodes Draw | 140 |
| Precommercial Thinning | Upper Griffin | 60 |
| Precommercial Thinning | Ashley Creek | 360 |
| | | 5,400 |
| Forest Total | | 34,033 |

F. 10-YEAR TIMBER SALE OFFERING

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky * Heli** | Const. | Reconst. |
| **FY 86** | | | | | | | | | | | |
| **SWAN LAKE** | | | | | | | | | | | |
| Whitetail Porcupine<br>(Comp. 128, 131, 134)<br>MA 15 (Upper Swan Geog. Unit)<br>Sections 3, 4, 9, 10, 15, 16, 17, 20, 28, 29, 33; T24N, R18W | 13.0 | 485 | 485 | | | 205(5.5) | 52(1.4) | 228(6.1) | | 7.5 | 12.0 |
| Haskill OSR - LP<br>(Comp. 108, 109)<br>MA 15 (Island Geog. Unit)<br>Sections 2, 3, 4, 8, 10; T26N, R23W<br>Sections 26, 27, 33, 34, 35; T27N, R23W | 6.0 | 360 | 360 | | | 300(5.0) | 60(1.0) | | | 5.0 | 1.3 |
| Emmons Creek<br>(Comp. 102, 103)<br>MA 15 (Island Geog. Unit)<br>Sections 6, 7; T26N, R21W<br>Sections 1, 2, 12; T26N, R22W | 5.0 | 350 | 350 | | | 250(3.6) | 100(1.4) | | | 5.6 | 1.4 |
| Small Sales<br>(District-wide) | 6.0 | | | | | | | | | | |
| Swan Lake Totals | 30.0 | 1195 | 1195 | | | 755(14.1) | 212(3.8) | 228(6.1) | | 18.1 | 14.7 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| FY 86 | | | | | | | | | | | |
| HUNGRY HORSE/SPOTTED BEAR | | | | | | | | | | | |
| Silver Run (Comp. 605)<br>MA 15 (West Side Geog. Unit)<br>Sec. 36; T30N, R19W<br>Sec. 1, 2, 9, 10, 11, 12, 14, 16, 17; T29N, R19W | 7.5 | 320 | 280 | | 40 | 40(1.2) | | 200(4.7) | 80(1.6)* | 3.0 | 8.0 |
| Lost Johnny (Comp. 606)<br>MA 15 (West Side Geog. Unit)<br>Sec. 1, 11, 12, 13, 14, 15; T29N, R19W | 4.0 | 200 | 200 | | | 10(0.2) | | 130(2.5) | 60(1.3)* | 3.5 | 6.0 |
| Bent Flat (Comp. 403-4)<br>MA 13 and 15 (Spotted Bear Geog. Unit)<br>Sec. 26, 31, 34, 35, 36; T26N, R15W<br>Sec. 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12; T25N, R14W | 7.9 | 440 | 420 | | 20 | 290(5.2) | | 150(2.7) | | 12.1 | 10.7 |
| Small Sales (District-wide) | 4.6 | | | | | | | | | | |
| Hungry Horse/Spotted Bear Totals | 24.0 | 960 | 900 | | 60 | 340(6.6) | | 480(9.9) | 140(2.9)* | 18.6 | 24.7 |
| GLACIER VIEW | | | | | | | | | | | |
| Forks Hallowat<br>(Comp. 735, 737, 739)<br>MA 15 (Big Creek Geog. Unit)<br>Sec. 14, 15, 16, 22, 23, 24, 25; T33N, R22W<br>Sec. 28, 29, 30, 31, 32, 33; T33N, R21W | 5.3 | 422 | 398 | 24 | | 130(1.6) | | 292(3.7) | | 0 | 0 |
| Small Sales (District-wide) | 2.0 | | | | | | | | | | |
| Glacier View Totals | 7.3 | 422 | 398 | 24 | | 130(1.6) | | 292(3.7) | | 0 | 0 |

Refer to Annual Timber Sale Plan at Flathead National Forest Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| **FY 86** | | | | | | | | | | | |
| **TALLY LAKE** | | | | | | | | | | | |
| Grubb Salvage<br>(Comp. 830-1, 3, 4 & 5)<br>MA 15 (Upper Griffin Geog. Unit)<br>Secs. 16, 17, 20, 29; T29N, R25W | 9.6 | 491 | 491 | | | 491(9.6) | | | | 1.0 | |
| Bburg Salvage<br>(Comp. 830-1, 3, 4, & 5)<br>MA 15 (Upper Griffin Geog. Unit)<br>Secs. 10, 15, 16, 21 & 28; T29N, R25W | 6.9 | 325 | 325 | | | 325(6.9) | | | | | |
| Sylvia Lake Salvage<br>(Comp. 821-3, 5 & 6)<br>MA 15 (Sylvia Lake Geog. Unit)<br>Sec. 19; T30N, R25W<br>Secs. 24, 25; T30N, R26W | 4.3 | 240 | 240 | | | 170(3.3) | 70(1.0) | | | 2.0 | |
| Lupine Salvage<br>(Comp. 829-1)<br>MA 15 (Upper Griffin Geog. Unit)<br>Secs. 1, 2, 11, 12; T29N, R25W | 4.5 | 250 | 250 | | | 250(4.5) | | | | | |
| Small Sales<br>(District-wide) | 4.7 | | | | | | | | | | |
| Tally Lake Totals | 30.0 | 1306 | 1306 | | | 1236(24.3) | 70(1.0) | | | 3.0 | |
| **FY 86 DISTRICT TOTALS** | 91.3 | 3883 | 3799 | 24 | 60 | 2461(46.1) | 282(4.0) | 1000(20.9 | 140(2.9)* | 39.7 | 39.4 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| **FY 87** | | | | | | | | | | | |
| **SWAN LAKE** | | | | | | | | | | | |
| Blacktail Kerr<br>(Comp. 101, 102, 111)<br>MA 15 (Island Geog. Unit)<br>Secs. 19, 20, 21, 22, 26, 27, 28, 29, 30, 32, 33; T26N, R21W<br>Secs. 13, 14, 23, 24; T26N, R22W | 8.0 | 900 | 450 | 450 | | 600(5.5) | 300(2.5) | | | 11.4 | 2.4 |
| Haskill Mountain (Comp. 109)<br>MA 9, 15 (Island Geog. Unit)<br>Secs. 4, 6; T26N, R23W<br>Secs. 27, 28, 33; T27N, R23W | 2.0 | 165 | 165 | | | 165(2.0) | | | | 0.5 | 2.0 |
| Hog Tail (Comp. 112)<br>MA 13, 15, 15D (Island Geog. Unit)<br>Secs. 30, 31, 32, 33; T26N, R21W<br>Secs. 25, 26, 27, 28, 32, 33, 34, 35, 36; T26N, R22W<br>Secs. 3, 4; T25N, R22W | 8.0 | 500 | 500 | | | 350(5.6) | 150(2.4) | | | 3.9 | 8.8 |
| Upper Crane (Comp. 123, 124)<br>MA 7, 15 (East Shore Geog. Unit)<br>Secs. 10, 11, 12, 13, 14, 15, 21, 22, 23, 24; T25N, R19W | 6.0 | 425 | 325 | 100 | | 300(4.2) | | 125(1.8) | | 6.3 | |
| Small Sales<br>(District-wide) | 6.0 | | | | | | | | | | |
| Swan Lake Totals | 30.0 | 1990 | 1440 | 550 | | 1415(17.3) | 450(4.9) | 125(1.8) | | 22.1 | 13.2 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| **FY 87** | | | | | | | | | | | |
| **HUNGRY HORSE/SPOTTED BEAR** | | | | | | | | | | | |
| Battery Quintonkon<br>(Comp. 438, 439, 613, 616)<br>MA 15, 16 (West Side and Sullivan Geog. Unit)<br>Secs. 2, 3, 9, 15-21, 30; T26N, R17W<br>Secs. 13, T26N, R16W<br>Secs. 15-17, 20-23, 27, 28, 31-35; T27N, R17W | 18.0 | 660 | 660 | | | 80(2.1) | | 440(12.1) | 140(3.8)* | 11.5 | 6.0 |
| Corkscrew<br>(Comp. 631, 632, 633)<br>MA 15 (East Side Geog. Unit)<br>Secs. 6, 7, 17, 18; T27N, R16W<br>Sec. 1; T27N, R17W<br>Secs. 10, 11, 13, 14, 15, 23-26, 36; T28N, R17W | 5.0 | 320 | 220 | | 100 | 140(1.1) | | 180(3.9) | | 7.0 | 3.0 |
| Small Sales (District-wide) | 1.0 | | | | | | | | | | |
| Hungry Horse/Spotted Bear Totals | 24.0 | 980 | 880 | | 100 | 220(3.2) | | 620(16.0) | 140(3.8)* | 18.5 | 9.0 |

'Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| FY 87 | | | | | | | | | | | |
| GLACIER VIEW | | | | | | | | | | | |
| Ninko II (Comp. 713)<br>MA 15 (Whale-Coal Geog. Unit)<br>Sec. 20, 21, 22, 23, 24; T36N, R23W | 3.5 | 240 | 240 | | | | | 165(2.4) | 75(1.1)* | 3.8 | |
| Raghorn (Comp. 728, 727, 733)<br>MA 15 (Whale-Coal Geog. Unit)<br>Sec. 19, 20, 21, 22, 23, 24, 25, 26; T34N, R22W | 6.8 | 405 | 405 | | | | | 286(4.8) | 119(2.0) | 5.9 | |
| Long Hallowat (Comp. 735)<br>MA 15 (Big Creek Geog. Unit)<br>Sec. 14, 15, 23, 24; T33N, R22W | 2.8 | 186 | 186 | | | | | 73(1.1) | 113(1.7)* | | 1.9 |
| Fork Creek(Comp. 737)<br>MA 15, 17 (Big Creek Geog. Unit)<br>Sec. 26, 27, 34, 35; T33N, R21W | 2.8 | 169 | 169 | | | | | 169(2.8) | | 2.3 | |
| Akinkoka (Comp. 712, 715, 717)<br>MA 15, 17 (Whale-Coal (Geog. Unit)<br>Sec. 25, 26, 27, 36; T36N, R23W<br>Sec. 30, 31, 32; T36N, R22W | 8.7 | 400 | 400 | | | | 50(1.1) | 230(5.0) | 120(2.6)* | 6.4 | 1.0 |
| Small Sales (District-wide) | 2.0 | | | | | | | | | | |
| Glacier View Totals | 26.6 | 1400 | 1400 | | | | 50(1.1) | 923(16.1) | 427(7.4)* | 18.4 | 2.9 |

Refer to Annual Timber Sale Plan at Flathead National Forest Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System Tractor | Cable | Sky 1 | Sky 2* Heli** | Road Mi. Const. | Reconst. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FY 87 | | | | | | | | | | | |
| TALLY LAKE | | | | | | | | | | | |
| Dunn Teepee Salvage (Comp. 816-5, 821-2, 4, 6 and 7)<br>MA 15 (Sylvia Lake Geog. Unit)<br>Secs. 6, 7, 8, 18; T30N, R25W<br>Secs. 12, 13, 14, 23; T30N, R26W | 6.1 | 340 | 340 | | | 340(6.1) | | | | 1.0 | |
| Hand to Mouth Salvage (Comp. 827-1, 2, 3, 4, 829-1)<br>MA 15 (Sylvia Lake Geog. Unit)<br>Secs. 32, 33, 34; T30N, R25W<br>Secs. 3, 4, 5, 6, 8, 9; T29N, R25W | 15.0 | 840 | 840 | | | 720(13.0) | 120(2.0) | | | 1.0 | |
| Small Sales (District-wide) | 8.9 | | | | | | | | | | |
| Tally Lake Totals | 30.0 | 1180 | 1180 | | | 1060(19.1) | 120(2.0) | | | 2.0 | |
| **FY 87 DISTRICT TOTALS** | 110.6 | 5550 | 4900 | 550 | 100 | 2695(39.6) | 620(8.0) | 1668(33.9) | 567(11.2)* | 61.0 | 25.1 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| FY 88 | | | | | | | | | | | |
| SWAN LAKE | | | | | | | | | | | |
| Cramer Stoner<br>(Comp. 101, 102)<br>MA 9, 15 (Island Geog. Unit)<br>Secs. 2, 4, 5, 8, 16, 17; T26N, R21W<br>Sec. 32; T27N, R21W | 5.0 | 350 | 350 | | | 250(3.6) | 100(1.4) | | | 5.4 | 0.4 |
| Truman Lodgepole (Comp. 104)<br>MA 15 (Island Geog. Unit)<br>Secs. 2, 3, 4, 10, 11, 14, 15, 22, 23, 26, 27; T26N, R22W | 5.0 | 410 | 360 | 50 | | 210(2.5) | 200(2.5) | | | 2.0 | |
| Crane Lodgepole*<br>(Comp. 119, 123, 124)<br>MA 7, 15 (East Shore Geog. Unit)<br>Secs. 18, 19, 30, 31; T25N, R18W<br>Secs. 2, 3, 10, 11, 12, 13, 14, 23, 24, 25, 26, 27, 34, 35, 36; T25N, R19W<br>Secs. 26, 27, 28, 33, 34, 35; T26N, R19W | 14.0 | 990 | 800 | 190 | | 740(10.4) | 50(0.7) | 200(2.9) | | 15.0 | |
| Small Sales<br>(District-wide) | 6.0 | | | | | | | | | | |
| Swan Lake Totals | 30.0 | 1750 | 1510 | 240 | | 1200(16.5) | 350(4.6) | 200(2.9) | | 22.4 | 0.4 |

*Will probably be sold as 3 sales.

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System |  |  |  | Road Mi. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| FY 88 |  |  |  |  |  |  |  |  |  |  |  |
| HUNGRY HORSE/SPOTTED BEAR |  |  |  |  |  |  |  |  |  |  |  |
| Hungry Tiger<br>(Comp. 620, 625)<br>MA 15, 13, 7, (Emery Creek Geog. Unit)<br>Secs. 33, 34; T31N, R18W<br>Secs. 2, 3, 4, 8-17, 20-23; T30N, R18W | 6.8 | 467 | 467 |  |  |  |  | 280(4.1) | 187(2.7)* | 7.0 | 1.5 |
| Slippery Bill<br>(Comp. 660, 662)<br>MA 15A (Bear Creek - Challenge Cabin Geog. Unit)<br>Secs. 32-35; T29N, R13W<br>Secs. 2-11, 16-18; T28N, R13W | 7.5 | 400 | 400 |  |  | 200(4.3) |  | 200(4.2) |  | 4.0 | 6.0 |
| Spotted Bear Mountain<br>(Comp. 409)<br>MA 13 (South Fork Geog. Unit)<br>Secs. 15, 16, 17, 21, 22, 26, 27, 28, 35, 36; T25N, R15W | 8.0 | 710 | 160 |  | 550 | 660(6.0) |  | 50(2.0) |  |  |  |
| Small Sales<br>(District-wide) | 1.7 |  |  |  |  |  |  |  |  |  |  |
| Hungry Horse/Spotted Bear Totals | 24.0 | 1577 | 1027 |  | 550 | 860(10.3) |  | 530(10.3) | 187(2.7)* | 11.0 | 7.5 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| **FY 88** | | | | | | | | | | | |
| **GLACIER VIEW** | | | | | | | | | | | |
| Upper Coal (Comp. 727, 728)<br>MA 15 (Whale-Coal Geog. Unit)<br>Sec. 16, 17, 18, 19;<br>T34N, R22W | 1.9 | 84 | 84 | | | | | 84(1.9) | | .6 | |
| Lower Coal (Comp. 727)<br>MA 15 (Whale-Coal Geog. Unit)<br>Sec. 14, 15, 16, 22, 23, 24;<br>T34N, R22W | 2.5 | 117 | 117 | | | 36(.8) | | 81(1.7) | | .6 | 1.0 |
| East Elelehum (Comp. 734)<br>MA 15 (Big Creek Geog. Unit)<br>Sec. 22, 23, 24, 25, 26, 27,<br>28, 33, 34; T33N, R21W<br>Sec. 19, 30; T33N, R20W | 2.9 | 220 | 220 | | | 100(1.3) | | 67(.9) | 53(.7)* | 1.4 | |
| Lakalaho (Comp. 741)<br>MA 15 (Big Creek Geog. Unit)<br>Sec. 12, 13, 14;<br>T32N, R22W<br>Sec. 8, 17; T32N, R21W | 6.4 | 322 | 322 | | | 20(.4) | | 302(6.0) | | 5.0 | 1.0 |
| Small Sales<br>(District-wide) | 2.0 | | | | | | | | | | |
| Glacier View Totals | 15.7 | 743 | 743 | | | 156(2.5) | | 534(10.5) | 53(.7)* | 7.6 | 2.0 |

Refer to Annual Timber Sale Plan at Flathead National Forest Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| **FY 88** | | | | | | | | | | | |
| **TALLY LAKE** | | | | | | | | | | | |
| Dendrocto Salvage (Comp. 829-2, 830-2, 832-1,2) MA 15, 17 (Upper Griffin Geog. Unit) Secs. 14, 15, 16, 22, 23, 24, 25, 26; T29N, R25W | 10.5 | 600 | 600 | | | 600(10.5) | | | | 2.5 | |
| Sarge Salvage (Comp. 826-1, 2) MA 15 (Star Meadow - Logan Creek Geog. Unit) Secs. 24, 25, 23, 26, 35; T30N, R25W | 5.0 | 300 | 300 | | | 250(4.0) | 50(1.0) | | | | |
| Smoke Creek (Comp. 815-1, 2, 3) MA 15 (Tally Lake - Round Meadow Geog. Unit) Secs. 17, 20, 21, 22, 27; T31N, R24W | 5.0 | 300 | 300 | | | 250(4.)0 | 50(1.0) | | | 2.0 | |
| Small Sales (District-wide) | 9.5 | | | | | | | | | | |
| Tally Lake Totals | 30.0 | 1200 | 1200 | | | 1100(18.5) | 100(2.0) | | | 4.5 | |
| **FY 88 DISTRICT TOTALS** | 99.7 | 5270 | 4480 | 240 | 550 | 3316(47.8) | 450(6.6) | 1264(23.7) | 240(3.4)* | 45.5 | 9.9 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location<br>(Sale Name)(Compartment)<br>(Management Area)<br>(Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System |  |  |  | Road Mi. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  | Tractor | Cable | Sky 1 | Sky 2*<br>Heli** | Const. | Reconst. |
| FY 89 |  |  |  |  |  |  |  |  |  |  |  |
| SWAN LAKE |  |  |  |  |  |  |  |  |  |  |  |
| Jim Fatty II<br>(Comp. 135, 201, 202, 205, 208, 210)<br>MA 9, 15 (Upper Swan Geog. Unit)<br>Secs. 6, 18; T21N, R17W<br>Sec. 12; T21N, R18W<br>Secs. 18, 30; T22N, R17W<br>Secs. 2, 4, 10, 12, 26; T22N, R18W | 13.0 | 820 | 820 |  |  | 520(8.2) | 50(0.8) | 250(4.0) |  | 14.7 | 4.4 |
| Van Alder<br>(Comp. 203, 204, 206, 207, 209)<br>MA 9, 13, 15 (Upper Swan Geog. Unit)<br>Sec. 30; T22N, R16W<br>Secs. 2, 12, 24; T22N, R17W | 6.0 | 350 | 350 |  |  | 205(3.5) | 45(0.8) | 100(1.7) |  | 12.0 | 15.0 |
| Island Unit Buyout<br>(Comp. 105, 106, 112)<br>MA 15, 17 (Island Unit Geog. Unit)<br>Secs. 17, 20, 29, 32, 33, 34, 35, 36; T26N, R22W | 5.0 | 275 | 275 |  |  | 150(2.7) |  | 125(2.3) |  |  |  |
| Small Sales<br>(District-wide) | 6.0 |  |  |  |  |  |  |  |  |  |  |
| Swan Lake Totals | 30.0 | 1445 | 1445 |  |  | 875(14.4) | 95(1.6) | 475(8.0) |  | 26.7 | 19.4 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location<br>(Sale Name)(Compartment)<br>(Management Area)<br>(Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System |  |  |  | Road Mi. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  | Tractor | Cable | Sky 1 | Sky 2*<br>Heli** | Const. | Reconst. |
| FY 89 |  |  |  |  |  |  |  |  |  |  |  |
| HUNGRY HORSE/SPOTTED BEAR |  |  |  |  |  |  |  |  |  |  |  |
| Road 895 #2<br>(Comp. 605-609, 611-613, 616)<br>MA 7 (West Side Geog. Unit)<br>Secs. 26, 35, 36; T30N, R19W<br>Sec. 2; T29N, R19W<br>Secs. 17, 23, 26; T29N, R18W<br>Secs. 3, 5, 6, 10, 25; T27N, R17W<br>Sec. 29; T28N, R17W | 4.0 | 464 | 188 |  | 276 | 405(3.5) | 47(.4) | 12(.1) |  |  | 1.0 |
| Emma Pearl (Comp. 611)<br>MA 15, 7 (West Side Geog. Unit)<br>Secs. 7, 8, 17, 18, 19, 20; T28N, R17W<br>Secs. 13, 14, 23, 24; T28N, R18W | 3.5 | 175 | 175 |  |  |  |  | 175(3.5) |  | 2.5 | 1.0 |
| Royal Strife Helo<br>(Comp. 620)<br>MA 15, 16 (Emery Creek Geog. Unit)<br>Secs. 17, 18, 20, 21, 27, 28, 29, 33, 34; T31N, R18W<br>Secs. 3, 4; T30N, R18W | 6.7 | 305 | 305 |  |  |  |  |  | 305(6.7)** |  |  |
| Kah Rap Elam (Comp. 442)<br>MA 15, 16 (South Fork Geog. Unit)<br>Secs. 1, 12; T26N, R17W<br>Secs. 5, 6, 7, 8, 16, 17, 18; T26N, R16W | 6.4 | 490 | 250 | 60 | 180 | 160(.8) | 20(.4) | 270(4.3) | 40(.9)* | 6.2 | 5.0 |
| Small Sales<br>(District-wide) | 3.4 |  |  |  |  |  |  |  |  |  |  |
| Hungry Horse/Spotted Bear Totals | 24.0 | 1434 | 918 | 60 | 456 | 565(4.3) | 67(.8) | 457(7.9) | 40(.9)*<br>305(6.7)** | 8.7 | 7.0 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

FLATHEAD NATIONAL FOREST PLAN
TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System: Tractor | Cable | Sky 1 | Sky 2* Heli** | Road Mi. Const. | Reconst. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FY 89 | | | | | | | | | | | |
| GLACIER VIEW | | | | | | | | | | | |
| Kletomus Moose (Comp. 735)<br>MA 15 (Big Creek Geog. Unit)<br>Sec. 17, 18, 19, 20, 30; T33N, R21W | 2.1 | 150 | 150 | | | | | | 150(2.1)* | 4.8 | .5 |
| Voght Creek (Comp. 736, 737)<br>MA 15 (Big Creek Geog. Unit)<br>Sec. 28, 29, 30, 32, 33; T33N, R20W | 2.7 | 230 | 230 | | | 30(.4) | | 200(2.3) | | 1.9 | |
| Nine Cedar (Comp. 739)<br>MA 7, 15 (Canyon-Teakettle Geog. Unit)<br>Sec. 29, 30, 31, 32, 33, 34; T32N, R20W<br>Sec. 3, 4, 5, 6, 7, 8, 9, 16, 17; T31N, R20W | 9.6 | 690 | 640 | 50 | | 177(2.5) | | 513(7.1) | | 9.1 | 1.0 |
| Small Sales (District-wide) | 2.0 | | | | | | | | | | |
| Glacier View Totals | 16.4 | 1070 | 1020 | 50 | | 207(2.9) | | 713(9.4) | 150(2.1)* | 15.8 | 1.5 |

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2*<br>Heli** | Const. | Reconst. |
| FY 89 | | | | | | | | | | | |
| TALLY LAKE | | | | | | | | | | | |
| Catamount<br>(Comp. 824-2 & 3, 828-1 1 & 2, 829 -1)<br>MA 15 (Star Meadow - Logan Creek Geog. Unit)<br>Secs. 4, 5, 6, 7, 8, 9, 16; T29N, R24W<br>Secs. 28, 32, 33; T30N, R24W | 6.0 | 350 | 350 | | | 250(4.5) | 100(1.5) | | | 1.0 | |
| Martin Falls LP<br>(Comp. 804-1 & 2)<br>MA 15 (Olney - Martin Creek Geog. Unit)<br>Secs. 7, 18; T32N, R24W<br>Secs. 12, 13; T32N, R25W | 4.5 | 300 | 300 | | | 300(4.5) | | | | 4.0 | |
| Potter Creek<br>(Comp. 803-2, 805-2)<br>MA 15 (Olney - Martin Creek Geog. Unit)<br>Secs. 9, 15, 16, 21, 22, 23, 26, 27, T32N, R25W | 7.5 | 450 | 450 | | | 350(6.0) | 100(1.5) | | | 4.5 | |
| Johnson Ridge<br>(Comp. 811-2, 812-2)<br>MA 15 (Tally Lake - Round Meadow Geog. Unit)<br>Secs. 9, 16, 17; T31N, R24W | 5.0 | 350 | 350 | | | 350(5.0) | | | | 2.5 | |
| Evers Ridge Salvage<br>(Comp. 811-2, 812-1)<br>MA 15 (Tally Lake - Round Meadow Geog. Unit)<br>Secs. 3, 10, 11; T31N, R24W | 0.7 | 65 | 65 | | | 65(0.7) | | | | | |
| Small Sales<br>(District-wide) | 6.3 | | | | | | | | | | |
| Tally Lake Totals | 30.0 | 1515 | 1515 | | | 1315(20.7) | 200(3.0) | | | 12.0 | |
| FY 89 DISTRICT TOTALS | 100.4 | 5464 | 4898 | 110 | 456 | 2962(42.3) | 362(5.4) | 1645(25.3) | 190(3.0)*<br>305(6.7)** | 63.2 | 27.9 |

Refer to Annual Timber Sale Plan at FNF Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System Tractor | Cable | Sky 1 | Sky 2* Heli** | Road Mi. Const. | Reconst. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FY 90 | | | | | | | | | | | |
| SWAN LAKE | | | | | | | | | | | |
| Cold Glacier<br>(Comp. 210, 212, 215, 217, 219)<br>MA 15, 15C (Upper Swan Geog. Unit)<br>Sec. 8, 16, 20; T19N, R17W<br>Sec.4, 8; T20N, R17W<br>Sec. 12; T20N, R18W<br>Sec. 16, 22, 28; T21N, R17W<br>Sec. 36; T21N, R18W | 9.0 | 510 | 460 | 50 | | 320(5.7) | | 190(3.3) | | 6.0 | |
| Noisy Face<br>(Comp. 113, 114, 115, 116)<br>MA 7A, 13C (Noisy Face Geog. Unit)<br>Sec. 12; T27N, R19W<br>Sec. 7, 8, 9, 10, 15, 17, 18, 35; T28N, R19W | 2.0 | 160 | 80 | 80 | | 120(1.5) | | 40(0.5) | | 3.0 | 1.0 |
| Lost Creek<br>(Comp. 127, 129, 130, 133)<br>MA 15, 16 (Lower Swan Geog. Unit)<br>Sec. 4, 5, 6, 7, 8; T24N, R17W<br>Sec. 22, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36; T25N, R17W | 6.0 | 515 | 430 | 85 | | 115(1.3) | | 60(0.7) | 155(1.8)*<br>185(2.2)** | 8.5 | 2.0 |
| Mount Cleanup(Comp. 106)<br>MA 15 (Island Geog. Unit)<br>Sec. 8, 19, 20, 29, 30; T26N, R22W | 2.0 | 115 | 115 | | | 75(1.3) | | 40(0.7) | | | |
| Birch Patrick Buyout<br>(Comp. 101)<br>MA 15 (Island Geog. Unit)<br>Sec. 18, 19, 20, 30; T27N, R21W<br>Sec. 25, 26; T27N, R21 1/2W<br>Sec. 12; T27N, R22W | 3.0 | 240 | 90 | 150 | | 220(2.7) | | 20(0.3) | | | |
| Small Sales<br>(District-wide) | 6.0 | | | | | | | | | | |
| Swan Lake Totals | 28.0 | 1540 | 1175 | 365 | | 850(12.5) | | 350(5.5) | 155(1.8)*<br>185(2.2)** | 17.5 | 3.0 |

Refer to Annual Timber Sale Plan at Flathead National Forest Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location<br>(Sale Name)(Compartment)<br>(Management Area)<br>(Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2*<br>Heli** | Const. | Reconst. |
| **FY 90** | | | | | | | | | | | |
| **HUNGRY HORSE/SPOTTED BEAR** | | | | | | | | | | | |
| Upper Forest (Comp. 613)<br>MA 15 (West Side Geog. Unit)<br>Sec. 3, 4, 8, 9, 10, 15-22, 28; T27N, R17W | 2.5 | 190 | 80 | | 110 | 85(1.7) | 30(.4) | 75(.4) | | 1.5 | |
| Clay 90 (Comp. 608, 609)<br>MA 15 (West Side Geog. Unit)<br>Sec. 26, 34, 35, 36; T29N, R18W<br>Sec. 2, 3, 4, 5, 8, 9, 10; T28N, R18W | 2.0 | 145 | 90 | | 55 | 45(.2) | 10(.1) | 90(1.7) | | 1.5 | 1.0 |
| Road 38 #2<br>(Comp. 620, 621, 625, 628, 630-633)<br>MA 7, 13, 15 (East Side Geog. Unit)<br>Sec. 33; T29N, R17W<br>Sec. 5, 9, 16, 21, 26, 27, 28, 35; T28N, R17W<br>Sec. 2, 12, 13; T27N, R17W<br>Sec. 7, 18; T27N, R16W | 3.2 | 290 | 70 | 40 | 180 | 130(2.3) | | 160(.9) | | | |
| Beaver Creek (Comp. 410)<br>MA 15 (Spotted Bear River Geog. Unit)<br>Sec. 21-23; T25N, R14W | 3.2 | 160 | 160 | | | 160(3.2) | | | | 2.5 | 2.5 |
| Willow Creek (Comp. 417-418)<br>MA 15, 16 (Bunker Creek Geog. Unit)<br>Sec. 13, 24, 25; T24N, R15W<br>Sec. 19, 30; T24N, R14W | 3.0 | 300 | 60 | | 240 | 260(2.6) | | 20(.2) | 20(.2)* | 3.0 | 2.0 |
| Branch Creek (Comp. 440)<br>MA 15, 16 (Sullivan Creek Geog. Unit)<br>Sec. 22, 23, 27, 28, 33; T26N, R17W | 1.5 | 135 | 135 | | | | 20(.2) | 25(.3) | 90(1.0)* | 2.0 | 2.0 |
| Baldhead Flattop<br>(Comp. 648, 654, 655)<br>MA 15A (Bear Creek-Challenge Cabin Geog. Unit)<br>Sec. 7, 16-21, 29-31; T29N, R13W<br>Sec. 13, 36; T29N, R14W | 4.0 | 285 | 285 | | | 75(1.0) | | 210(3.0) | | 6.0 | 2.0 |
| Small Sales<br>(District-wide) | 4.6 | | | | | | | | | | |
| Hungry Horse/Spotted Bear Totals | 15.4 | 1220 | 595 | 40 | 585 | 680(10.0) | 60(.7) | 370(3.5) | 110(1.2)* | 10.5 | 7.5 |

Refer to Annual Timber Sale Plan at Flathead National Forest Supervisor's Office for current scheduling.

FLATHEAD NATIONAL FOREST PLAN
TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location<br>(Sale Name)(Compartment)<br>(Management Area)<br>(Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System: Tractor | Cable | Sky 1 | Sky 2*<br>Heli** | Road Mi. Const. | Reconst. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FY 90 | | | | | | | | | | | |
| GLACIER VIEW | | | | | | | | | | | |
| Werner Creek (Comp. 739)<br>MA 15 (Big Creek Geog. Unit)<br>Sec. 25, 26, 34, 35, 36; T33N, R22W<br>Sec. 31; T33N, R21W<br>Sec. 1, 2, 3; T34N, R22W | 5.4 | 317 | 317 | | | | | | 317(5.4)* | 2.9 | 2.0 |
| Depuy (Comp. 736, 742)<br>MA 15 (Canyon-Teakettle Geog. Unit)<br>Sec. 7, 8, 9, 15, 16, 17, 18, 20, 21, 28, 29; T32N, R20W | 7.2 | 502 | 502 | | | | 84(1.2) | 24(.3) | 394(5.7)* | 3.2 | |
| Small Sales<br>(District-wide) | 2.0 | | | | | | | | | | |
| Glacier View Totals | 14.6 | 819 | 819 | | | | 84(1.2) | 24(.3) | 711(11.1)* | 6.1 | 2.0 |
| TALLY LAKE | | | | | | | | | | | |
| Elk Divide<br>(Comp. 809-2, 3, 4, 6)<br>MA 15 (Upper Good Creek Geog. Unit)<br>Sec. 34, 35, 36; T32N, R26W<br>Sec. 1, 23, 10, 11, 12, 13, 14, 15, 23, 24; T31N, R26N<br>Sec. 7; T31N, R25W | 13.0 | 900 | 900 | | | 600(8.7) | 300(4.3) | | | 8.0 | |
| Fox Mountain<br>(Comp. 813-2 & 3, 816-4)<br>MA 15 (Upper Good Creek Geog. Unit)<br>Sec. 14, 15, 21, 22, 23; T31N, R25W | 7.5 | 750 | 750 | | | 600(6.0) | 150(1.5) | | | 6.0 | |
| Small Sales<br>(District-wide) | 9.5 | | | | | | | | | | |
| Tally Lake Totals | 30.0 | 1650 | 1650 | | | 1200(14.7) | 450(5.8) | | | 14.0 | |
| FY 90 DISTRICT TOTALS | 88.0 | 5229 | 4239 | 405 | 585 | 2730(37.2) | 594(7.7) | 744(9.3) | 976(14.1)*<br>185(2.2)** | 48.1 | 12.5 |

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Inter-mediate Harvest Acres | Acres (Vol.) Yarding System | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Road Mi. Const. Reconst. |
| FY 91 - FY 95 | 162 | 6850 | 6100 | 750 | | | | | | |

SWAN LAKE

**Sale Names**

Yew South
Bug Yew
Baldy Mountain
Emmons Lodgepole
Wild Mount Salvage
Haskill North
Freeland Hilburn
Patrick Creek
Woodward Ridge
Holland View
Sky Smith
Pinto Mare Buyout
Sixmile Hall
Beaver Divide
Pierce Divide
Squeezer Goat
Radar Ridge
Elk Point
Moore Jim

Small Sales

**Compartments**

101
102
103
105
106
108
109
111
112
117
118
120
121
122
125
126
128
131
132
133
134
136
138

205
208
211
212
213
214
215
216
218
220
221
222
223
224
225

**Management Areas**

5
7
9
11C
13
15
15C
15D
16
17

Refer to Annual Timber Sale Plan at Flathead National Forest Supervisor's Office for current scheduling.

## FLATHEAD NATIONAL FOREST PLAN
## TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System: Tractor | Cable | Sky 1 | Sky 2* Heli** | Road Mi. Const. | Road Mi. Reconst. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FY 91 - FY 95 | 120 | 7000 | 5000 | 300 | 1500 | | | | | 30 | 40 |

HUNGRY HORSE/SPOTTED BEAR

| Sale Names | Compartments | Management Areas |
|---|---|---|
| Wildcat | 401-404 | 7-9 |
| Betty Creek | 408-412 | 11 |
| Lion Whelp | 417-419 | 13 |
| Pinnacle Paola | 438-446 | 15-17 |
| Lost Jack | 448 | |
| Crystal Moccasin Helo | 601 | |
| Halfmoon | 604-609 | |
| Emery Hill | 611-614 | |
| Lid Creek | 616 | |
| Battery Sullivan | 618 | |
| Granite Ear Helo | 620-623 | |
| Goldie Knieff | 625 | |
| Heinrude Rock | 626 | |
| Road 895 #3 | 628 | |
| Firefighter Helo | 630-633 | |
| Stony Ad | 637 | |
| Essex Dickey Helo | 640 | |
| Ben Anna | 641 | |
| Wounded Buck Skyline | 646 | |
| South Fork Leave Strip | 648 | |
| Alpha Cove | 653 | |
| Cow Creek | 654 | |
| | 660 | |
| | 662 | |

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* Refer to Annual Timber Sale Plan at Flathead National Forest Supervisor's Office for current scheduling.

FLATHEAD NATIONAL FOREST PLAN'
TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location (Sale Name)(Compartment) (Management Area) (Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System | | | | Road Mi. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tractor | Cable | Sky 1 | Sky 2* Heli** | Const. | Reconst. |
| FY 91 - FY 95 | 71.4 | 3810 | 3306 | 504 | | | | | | 40.2 | 8.0 |

GLACIER VIEW

Sale Names

Red Moose
South Fork Coal Ridge
South Coal
Hay Creek
Upper Hay
Skookoleel
Teakettle
Big Nicola
Standard Peak
Kimmerly Canyon
Langford Helicopter
Hornet-Wedge
Lower Teepee

Compartments

706
709
710
711
714
715
717
719
720
722
723
724
726
727
728
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747

Management Areas

7
9
13
15
16
17

Refer to Annual Timber Sale Plan at Flathead National Forest Supervisor's Office for current scheduling.

FLATHEAD NATIONAL FOREST PLAN
TENTATIVE 10-YEAR TIMBER SALE OFFERING

| Area Location<br>(Sale Name)(Compartment)<br>(Management Area)<br>(Section, Township, Range) | MMBF Volume | Acres | CC Acres | SW Acres | Intermediate Harvest Acres | Acres (Vol.) Yarding System: Tractor | Cable | Sky 1 | Sky 2* Heli** | Road Mi. Const. | Reconst. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FY 91 - FY 95 | 191.6 | 8350 | 8350 | | | | | | | 20.0 | 5.0 |

**TALLY LAKE**

**Sale Names**

Corduroy
Bowen Drainage
Dawdy
Tiker
Fly Ranch Salvage
Tally Mountain
Martin Lakes
Foxie
Falls
Alder Creek
Taylor Creek Relog
Mountain Meadows
William Creek
Ingalls Sawlogs
Grouse Miller

Small Sales

**Compartments**

802
803
804
805
806
807
808
809
811
814
818
819
822
823
824
826

**Management Areas**

7
9
13
15
17

# APPENDIX N

## TIMBER SOLD AND CUT

Flathead National Forest

Timber Sold and Cut (MBF), Volume Under Contract (MBF), & 25% Payments to Counties - Flathead National Forest, January 1985

| Fiscal Year | Volume Sold | Volume Cut | Volume Under Contract | 25% Payments To All Counties * |
|---|---|---|---|---|
| 61 | 129,133 | 108,879 | 177,000 | 120,351 |
| 62 | 135,058 | 126,697 | 197,600 | 245,978 |
| 63 | 146,136 | 146,305 | 219,900 | 252,493 |
| 64 | 135,052 | 135,147 | 245,200 | 303,706 |
| 65 | 134,198 | 145,533 | 295,400 | 355,985 |
| 66 | 138,406 | 167,644 | 291,700 | 296,579 |
| 67 | 141,701 | 138,572 | 274,900 | 361,702 |
| 68 | 147,497 | 156,161 | 260,300 | 557,278 |
| 69 | 150,527 | 167,780 | 276,900 | 1,128,590 |
| 70 | 231,680 | 145,855 | 373,600 | 511,950 |
| 71 | 153,818 | 149,060 | 375,700 | 493,882 |
| 72 | 131,921 | 156,425 | 343,400 | 1,046,888 |
| 73 | 120,248 | 118,363 | 321,200 | 996,289 |
| 74 | 111,140 | 132,582 | 304,700 | 1,162,734 |
| 75 | 148,437 | 114,619 | 338,200 | 668,381 |
| 76 | 123,064 | 154,739 | 328,000 | 842,414 |
| 77 | 121,124 | 121,513 | 317,500 | 2,817,327 |
| 78 | 95,141 | 80,079 | 352,300 | 2,274,000 |
| 79 | 73,562 | 95,978 | 316,200 | 2,182,825 |
| 80 | 194,340 | 92,936 | 418,800 | 2,166,984 |
| 81 | 46,675 | 108,417 | 379,500 | 2,565,821 |
| 82 | 148,740 | 54,441 | 422,800 | 1,097,834 |
| 83 | 129,048 | 83,089 | 485,700 | 1,142,655 |
| 84 | 81,844 | 107,488 | 414,800 | 1,734,692 |

*Actual dollars (not adjusted for inflation)

# APPENDIX O

## OIL AND GAS LEASE STIPULATIONS
Flathead National Forest

Stipulations on the following pages in Appendix O are included in leases to protect surface resources.

The stipulations on forms 3109-5, 3109-3 and MSO 3109-12 are included in every lease.

The stipulations on forms MT 3109-3, MT 3109-6, and MT 3109-7 are used whenever the leased area has special surface resource values needing special protection.

Serial Number ____________________

Flathead National Forest

## OIL & GAS LEASE EVALUATION FORM
## and
## ENVIRONMENTAL ASSESSMENT

## I. INTRODUCTION

A. District ____________________ Date ____________________

Project location (enter legal description from Oil and Gas Lease Application Form ____________________

____________________ Topo Quad.: ____________________

The purpose of this EA is to implement the FS management direction given in the Flathead National Forest Programmatic Oil & Gas Leasing EA (1980).

This EA prepared by: ____________________

B. LAND STATUS:

1. Nonwilderness ____________ Location ____________
   Wilderness ____________ Location ____________
   Roadless ____________ Location ____________

2. Withdrawals ____________ Yes ____________ No
   If yes, cite nature of withdrawal, location, and agency involved (if applicable):

   ____________________

   ____________________

3. Adjacent National Forest land involved ____________ Yes ____________ No
   If yes, which National Forest ____________
   Which Forest is the Major Forest ____________

## II. AFFECTED ENVIRONMENT, EVALUATION CRITERIA, AND MANAGEMENT PRESCRIPTION

A. MAP & OVERLAY REVIEW - Maps used are from the FNF Planning Data Base.

| Map | Criteria | Concern | Prescription | Applies to Offer | Location & ± Acres |
|---|---|---|---|---|---|
| 1. Land-type (Map CC) | LT 71<br>72<br>74<br>75<br>77 | >60% slope | NSO STIP<br>(1) Portion of sec(s)<br>(2) Slopes - 60% | | |
| | LT 73<br>76 | >60% slope | SOR STIP - loc.<br>(1) NSO other than specially designed roads<br>(2) Within LT 73, 76 | | |
| | LT 10 | 100 year flood plain | SOR STIP - loc.<br>(1) NSO other than specially designed roads, pipelines, & buried utilities will be allowed<br>(2) Within LT 10 | | |
| | LT 12 | High water table & important wildlife habitat | SOR STIP - loc.<br>(1) Ditto LT 10<br>(2) Within LT 12 | | |
| | LT 17<br>18 | Geologic hazards | SOR STIP - loc.<br>(1) Ditto LT 10<br>(2) Within LT 17, 18 | | |

| Map | Criteria | Concern | Prescription | Applies to Offer | Location & Acres |
|---|---|---|---|---|---|
| Landtype | LT 21 | T&E habitat & access limitations | NSO STIP<br>(1) Portions of sec(s)<br>(2) LT 21 - Cirque basins grizzly bear summer and denning habitat; short snow-free season, high snow avalahche hazard, and limited reclamation potential | | |
| | LT 32 | Geol. hazard | NSO STIP<br>(1) Portions of sec(s)<br>(2) LT 32 - landslide prone areas. | | |
| | LT 54<br>55 | Geol. hazard & limited reclamation potential | NSO STIP<br>(1) Portions of sec(s)<br>(2) Geol. hazards & limited reclamation potential | | |
| | LT 56<br>57 | Limited reclamation potential | SOR STIP - loc.<br>(1) No drilling will be allowed<br>(2) Within LT 56, 57 | | |
| 2. Water (Map EE) | Streams, Lakes Swamps, & Reservoirs | Protect water quality & wildlife habitat in the riparian zone | SOR STIP - loc.<br>(1) No surface disturbing activities unless specially designed to protect water quality and minimize vegetation disturbance<br>(2) 300'<br>(3) The normal high water line of all streams, lakes, swamps & reservoirs | | |
| | Springs | Protect water quality and wildlife habitat in the riparian zone | SOR STIP - loc.<br>(1) Ditto streams<br>(2) 300'<br>(3) All springs | | |
| | Migratory fish habitat | Protect migratory gamefish habitat & spawning gravels | SOR STIP - timing<br>(1) Migratory gamefish spawning streams<br>(2) New road construction near streams<br>(3) 5-2 to 6-30 & 9-16 to 3-14 depend on sp. present | | Loc. only |
| 3. Wildlife: Winter habitat (Map II) | Big game winter range | Avoid starting new activities in utilized winter range during stress period | SOR STIP - timing<br>(1) Big game winter range<br>(2) Surface disturbing activities including new road and site construction & drilling<br>(3) Dec. 1 - May 1 | | Loc. only |
| | Elk calving grounds | | SOR STIP - timing<br>(1) Elk calving grounds<br>(2) Ditto winter range<br>(3) April 15 - July 1 | | Loc. only |
| | Elk migration routes | | SOR STIP - timing<br>(1) Elk migration routes<br>(2) Ditto winter range<br>(3) Nov. 1 - Dec. 31 | | Loc. only |

2

Serial Number

| Map | Criteria | Concern | Prescription | Applies to Offer | Location & + Acres |
|---|---|---|---|---|---|
| T&E (Map HH) | Occupied or essential habitat | Protection of T&E species | ACTIVITY COORDINATION STIP<br>T&E species occupied or essential habitat | | Loc. only |
| | Occupied or essential grizzly bear or grey wolf habitat | Protection of grey wolf and grizzly bear habitat | Road Use STIP<br>Control human - animal conflicts and disturbances | | |
| | Key grizzly bear or grey wolf use area | Protection of grey wolf and grizzly bear habitat | SOR STIP - timing or loc.<br>Prevent human - animal conflicts and disturbances | | |
| | Essential occupied peregrine habitat | Prevent nesting disturbance | SOR STIP - timing & loc.<br>Essential-occupied peregrine habitat<br>Feb. 1 to July 31 | | |
| | 1/4 mile of bald eagle nest site | Maintain nest site integrity | NSO STIP<br>1/4 mile of bald eagle nest site | | |
| | 1/2 mile of bald eagle nest site | Prevent nesting disturbance | SOR STIP - timing<br>1/2 mile of bald eagle nest site<br>Feb. 1 to July 31 | | |
| 4. Recreation Sites (Map LL) | Developed rec. site or FS facilities work centers, utilized admin. sites, lookouts | Protection of existing developed use | SOR STIP - loc.<br>(1) No surface occupancy<br>(2) 400'<br>(3) (Enter type of use, facility, etc.) | | |
| | Scenic & recreational segments Flathead W&SR | Protect visual & recreational qualities of those segments | SOR STIP - loc.<br>(1) No surface occupancy<br>(2) 1320'<br>(3) The banks of a scenic or recreational segment of the Flathead Wild & Scenic River System | | |
| 5. Management Units (Map DD) | Identified Roadless areas in completed Unit Plans | Preserve special resources requiring roadless condition | Deny lease or use NSO STIP, or LSU STIP as appropriate | | |
| | Identified Restricted Motorized access areas in completed Unit Plans | Preserve special resources requiring restricted motorized areas. | LSU STIP | | |

B. FIELD REVIEW

1. Does the analyis in Part A indicate the need for a field review?___Yes___No

2. If a field review is necessary, attach report summarizing the findings of the investigation.

ADDITIONAL COMMENTS:

a. Approximate percent of lease available for surface occupancy ____________
b. Is surface occupancy permitted or recommended on adjacent leases ____________
c. Approximate percent of lease area with occupancy that some type of restriction by location or timing of activity occurs ____________
d. Attach or reference any data or information used in this analysis if not cited in the FNF Oil and Gas Leasing EA.

III. FOREST SERVICE PREFERRED ALTERNATIVE:

☐ A. Issue the lease with the standard stipulations as well as any special stipulations identified in this environmental analysis.

☐ B. Issue the lease with no surface occupancy due to the high environmental sensitivity of the lands and resources embraced by this lease offer, the limited occupancy opportunity, and the close proximity to adjacent leases with surface occupancy as identified in this environmental analysis.

☐ C. Deny issuance of the lease due to the high environmental sensitivity of the lands and resources embraced by this lease offer, the lack of- or limited occupancy and/or the lack of occupancy opportunity on adjacent leases as identified in this environmental analysis.

☐ D. Defer recommendations on this lease application until ____________

because ____________

____________

☐ E. Issue the lease with the Limited Surface Use Stipulation because of the special environmental values, surface uses, or environmental constraints identified in this analysis. This alternative was selected because ____________

____________

____________

____________ ____________
District Ranger Date

____________ ____________
Forest Supervisor Date

IV. DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT

It is my decision to adopt the recommendations of the Flathead National Forest for the reasons documented above. I have determined thru this analysis tiered to the above captioned Environmental Assessment that this is not a major federal action that would significantly affect the quality of the human environment. Therefore, an Environmental Impact Statement is not needed. This determination was based upon consideration of the site-specific physical, biological, and socioeconomic factors identified in this analysis. Environmental Analysis documents relating to this oil and gas lease recommendation are available for review at the Regional Office and the Flathead National Forest Supervisor's Office.

____________ ____________
Tom Coston Date
Regional Forester

Form 3110-1
Eleventh Edition
(February 1982)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0008
Expires: August 8, 1983

Office ..........

Serial No. ..........

Fill in on typewriter or print plainly in ink and sign in ink.

# OFFER TO LEASE AND LEASE FOR OIL AND GAS

## (Sec. 17 Noncompetitive Public Domain Lease)

**The undersigned hereby offers to lease all or any of the lands described in item 2 that are available for lease, pursuant and subject to the terms and provisions of the Act of February 25, 1920 (41 Stat. 437, 30 U. S. C. sec. 181), as amended, hereinafter referred to as the Act and to all reasonable regulations of the Secretary of the Interior now or hereafter in force, when not inconsistent with any express and specific provisions herein, which are made a part hereof.**

1. **Mr.**
**Mrs.**
**Miss** ..........
(First Name, Middle Initial, Last Name)

Please notify the signing office of any change of address.

..........
(Number and Street)

..........
(City, State, ZIP Code)

**2. Land requested:** State County T. : R. : Meridian

Total Area Acres

**3. Land included in lease:** State County T. : R. : Meridian

*(Offeror does not fill in this block)* **Total Area** **Acres Rental retained $**

4. **Amount remitted:** Filing fee $75 **Rental $** .........., **Total $** ..........

5. **Undersigned certifies as follows:**

(a) Offeror is a citizen of the United States. Native born .......... Naturalized .......... Corporation or other legal entity (specify what kind): ..........

(b) Offeror's interests, direct and indirect, do not exceed 200,000 acres in oil and gas options or 246,080 chargeable acres in options, offers to lease and leases in the same State, or 300,000 chargeable acres in leases, offers to lease and options in each leasing district in Alaska. (c) Offeror accepts as a part of this lease, to the extent applicable, the stipulations provided for in 43 CFR 3103.2. (d) Offeror is 21 years of age or over (or if a corporation or other legal entity, is duly qualified as shown by statements made or referred to herein). (e) Offeror has described all surveyed lands by legal subdivisions, all lands covered by protracted surveys by appropriate subdivisions thereof, or all unsurveyed lands not covered by protracted surveys by metes and bounds, and further states that there are no settlers on unsurveyed lands described herein.

6. Offeror ☐ is ☐ is not the sole party in interest in this offer and lease, if issued. *(If not the sole party in interest, statements should be filed as prescribed in Item 6 of the Special Instructions.)*

7. Offeror's signature to this offer shall also constitute offeror's signature to, and acceptance of, this lease and any amendment thereto that may cover any land described in this offer open to lease application at the time the offer was filed but omitted from this lease for any reason, or signature to, or acceptance of, any separate lease for such land. The offeror further agrees that (a) this offer cannot be withdrawn, either in whole or in part, unless the withdrawal is received by the land office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed in behalf of the United States, and (b) this offer and lease shall apply only to lands not within a known geologic structure of a producing oil or gas field.

8. If this lease form does not contain all of the terms and conditions of the lease form in effect at the date of filing, the offeror further agrees to be bound by the terms and conditions contained in that form.

9. It is hereby certified that the statements made herein are complete and correct to the best of offeror's knowledge and belief and are made in good faith.

Offeror duly executed this instrument this .......... day of .........., 19....

..........
(Lessee signature)

..........
(Lessee signature)

..........
(Attorney-in-fact)

This lease for the lands described in item 3 above is hereby issued, subject to the provisions of the offer and on the reverse side hereof.

THE UNITED STATES OF AMERICA

By ..........
(Signing officer)

Effective date of lease ..........

..........
(Title)

..........
(Date)

**THIS OFFER MAY BE REJECTED AND RETURNED TO THE OFFEROR AND WILL AFFORD THE OFFEROR NO PRIORITY IF IT IS NOT PROPERLY FILLED IN AND EXECUTED OR IF IT IS NOT ACCOMPANIED BY THE REQUIRED DOCUMENTS OR PAYMENTS.**

**18 U. S. C. sec. 1001 makes it a crime for any person knowingly and willfully to make to any Department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.**

This form may be reproduced provided that the copies are exact reproductions on one sheet of both sides of this official form, in accordance with the provisions of 43 CFR 3102.1(a)

GPO 834-152

# LEASE TERMS

SECTION 1. *Rights of lessee.*—The lessee is granted the exclusive right and privilege to drill for, mine, extract, remove, and dispose of all the oil and gas deposits, except helium gas, in the lands leased, together with the right to construct and maintain thereupon, all works, buildings, plants, waterways, roads, telegraph or telephone lines, pipelines, reservoirs, tanks, pumping stations, or other structures necessary to the full enjoyment thereof, for a period of 10 years, and so long thereafter as oil or gas is produced in paying quantities; subject to any unit agreement heretofore or hereafter approved by the Secretary of the Interior, the provisions of said agreement to govern the lands subject thereto where inconsistent with the terms of this lease.

SEC. 2. The lessee agrees:

(a) *Bonds.*—(1) To file any bond required by this lease and the current regulations and until such bond is filed not to enter on the land under this lease. (2) To maintain any bond furnished by the lessee as a condition for the issuance of this lease. (3) To furnish a bond in a sum double the amount of $2 per acre annual rental, but not less than $1,000 nor more than $10,000, upon the inclusion of any part of the leased land within the known geologic structure of a producing oil or gas field. (4) To furnish prior to beginning of drilling operations and maintain at all times thereafter as required by the lessor a bond in the penal sum of $10,000 with approved corporate surety, or with deposit of United States bonds as surety therefor, conditioned upon compliance with the terms of this lease, unless a bond in that amount is already being maintained or unless such a bond furnished by an operator of the lease is accepted. (5) Until a general lease bond is filed to furnish and maintain a bond in the penal sum of not less than $5,000 in those cases in which a bond is required by law for the protection of the owners of surface rights. In lieu of any of the bonds described herein the lessee may file such other bond as the regulations may permit.

(b) *Cooperative or unit plan.*—Within 30 days of demand, or, if the leased land is committed to an approved unit or cooperative plan and such plan is terminated prior to the expiration of this lease, within 30 days of demand made thereafter, to subscribe to and to operate under such reasonable cooperative or unit plan for the development and operation of the area, field, or pool, or part thereof, embracing the lands included herein as the Secretary of the Interior may then determine to be practicable and necessary or advisable, which plan shall adequately protect the rights of all parties in interest, including the United States.

(c) *Wells.*—(1) To drill and produce all wells necessary to protect the leased land from drainage by wells on lands not the property of the lessor, or lands of the United States leased at a lower royalty rate, or as to which the royalties and rentals are paid into different funds than are those of this lease; or in lieu of any part of such drilling and production, with the consent of the Director of the Geological Survey, to compensate the lessor in full each month for the estimated loss of royalty through drainage in the amount determined by said Director; (2) at the election of the lessee, to drill and produce other wells in conformity with any system of well spacing or production allotments affecting the field or area in which the leased lands are situated, which is authorized and sanctioned by applicable law or by the Secretary of the Interior; and (3) promptly after due notice in writing to drill and produce such other wells as the Secretary of the Interior may reasonably require in order that the leased premises may be properly and timely developed and produced in accordance with good operating practice.

(d) *Rentals and royalties.*—(1) To pay rentals and royalties in amount or value of production removed or sold from the leased lands as follows:

*Rentals.*—To pay the lessor in advance an annual rental at the following rates:

(a) If the lands are wholly outside the known geologic structure of a producing oil or gas field:

(1) **For each lease year a rental of $1.00 per acre or fraction of an acre.**

(b) If the lands are wholly or partly within the known geologic structure of a producing oil or gas field:

(1) Beginning with the first lease year after 30 days' notice that all or part of the land is included in such a structure and for each year thereafter, prior to a discovery of oil or gas on the lands leased, $2 per acre or fraction of an acre.

(2) If this lease is committed to an approved cooperative or unit plan which includes a well capable of producing oil or gas and contains a general provision for allocation of production, the rental prescribed for the respective lease years in subparagraph (a) of this section, shall apply to the acreage not within a participating area.

*Minimum royalty.*—Commencing with the lease year beginning on or after a discovery on the leased land, to pay the lessor in lieu of rental, a minimum royalty of $1 per acre or fraction thereof at the expiration of each lease year, or the difference between the actual royalty paid during the year if less than $1 per acre, and the prescribed minimum royalty of $1 per acre; provided that if this lease is unitized, the minimum royalty shall be payable only on the participating acreage and rental shall be payable on the nonparticipating acreage as provided in subparagraph (b) (2) above.

*Royalty on production.*—To pay the lessor 12½ percent royalty on the production removed or sold from the leased lands computed in accordance with the Oil and Gas Operating Regulations (30 CFR Pt. 221).

(2) It is expressly agreed that the Secretary of the Interior may establish reasonable minimum values for purposes of computing royalty on any or all oil, gas, natural gasoline, and other products obtained from gas; due consideration being given to the highest price paid for a part or for a majority of production of like quality in the same field, to the price received by the lessee, to posted prices, and to other relevant matters and, whenever appropriate, after notice and opportunity to be heard.

(3) When paid in value, such royalties on production shall be due and payable monthly on the last day of the calendar month next following the calendar month in which produced. When paid in amount of production, such royalty products shall be delivered in merchantable condition on the premises where produced without cost to lessor, unless otherwise agreed to by the parties hereto, at such times and in such tanks provided by the lessee as reasonably may be required by the lessor, but in no case shall the lessee be required to hold such royalty oil or other products in storage beyond the last day of the calendar month next following the calendar month in which produced nor be responsible or held liable for the loss or destruction of royalty oil or other products in storage from causes over which he has no control.

(4) Rentals or minimum royalties may be waived, suspended, or reduced, and royalties on the entire leasehold or any portion thereof segregated for royalty purposes may be reduced if the Secretary of the Interior finds that, for the purpose of encouraging the greatest ultimate recovery of oil or gas and in the interest of conservation of natural resources, it is necessary, in his judgment, to do so in order to promote development, or because the lease cannot be successfully operated under the terms fixed herein.

(e) *Payments.*—Unless otherwise directed by the Secretary of the Interior, to make rental, royalty, or other payments to the lessor, to the order of the Bureau of Land Management at the places mentioned in the regulation 43 CFR 3102.2. If there is no well on the leased lands capable of producing oil or gas in paying quantities, the failure to pay rental on or before the anniversary date shall automatically terminate the lease by operation of law. However, if the time for payment falls on a day in which the proper office to receive payment is closed, payment shall be deemed timely if made on the next official working day.

(f) *Contracts for disposal of products.*—To file with the Oil and Gas Supervisor of the Geological Survey not later than 30 days after the effective date thereof any contract, or evidence of other arrangement, for the sale or disposal of oil, gas, natural gasoline, and other products of the leased land; *Provided*, That nothing in any such contract or other arrangement shall be construed as modifying any of the provisions of this lease, including, but not limited to, provisions relating to gas waste, taking royalty in kind, and the method of computing royalties due as based on a minimum valuation and in accordance with the Oil and Gas Operating Regulations.

(g) *Statements, plats and reports.*—At such times and in such form as the lessor may prescribe, to furnish detailed statements showing the amounts and quality of all products removed and sold from the lease, the proceeds therefrom, and the amount used for production purposes or unavoidably lost; a plat showing development work and improvements on the leased lands, and a report with respect to stockholders, investments, depreciation and costs.

(h) *Well records.*—To keep a daily drilling record, a log, and complete information on all well surveys and tests in form acceptable to or prescribed by the lessor of all wells drilled on the leased lands, and an acceptable record of all subsurface investigations affecting said lands, and to furnish them, or copies thereof, to the lessor when required. All information obtained under this paragraph, upon the request of lessee, shall not be open to inspection by the public until the expiration of the lease.

(i) *Inspection.*—To keep open at all reasonable times for the inspection of any duly authorized officer of the Department, the leased premises and all wells, improvements, machinery, and fixtures thereon and all books, accounts, maps and records relative to operations and surveys or investigations on the leased lands or under the lease. All information obtained pursuant to any such inspection, upon the request of the lessee, shall not be open to inspection by the public until the expiration of the lease.

(j) *Diligence, prevention of waste, health and safety of workmen.*—To exercise reasonable diligence in drilling and producing the wells herein provided for unless consent to suspend operations temporarily is granted by the lessor; to carry on all operations in accordance with approved methods and practice as provided in the Oil and Gas Operating Regulations, having due regard for the prevention of waste of oil or gas or damage to deposits or formations containing oil, gas, or water or to coal measures or other mineral deposits, for conservation of gas energy, for the preservation and conservation of the property for future productive operations, and for the health and safety of workmen and employees; to plug properly and effectively all wells drilled in accordance with the provisions of this lease or of any prior lease or permit upon which the right to this lease was predicated before abandoning the same; to carry out at expense of the lessee all reasonable orders of the lessor relative to the matters in this paragraph, and that on failure of the lessee so to do the lessor shall have the right to enter on the property and to accomplish the purpose of such orders at the lessee's cost: *Provided*, That the lessee shall not be held responsible for delays or casualties occasioned by causes beyond lessee's control.

(k) *Taxes and wages, freedom of purchase.*—To pay when due, all taxes lawfully assessed and levied under the laws of the State or the United States upon improvements, oil and gas produced from the lands hereunder, or other rights, property, or assets of the lessee; to accord all workmen and employees complete freedom of purchase, and to pay all wages due workmen and employees at least twice each month in the lawful money of the United States.

(l) *Equal Opportunity clause.*—During the performance of this contract the lessee agrees as follows:

(1) The lessee will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The lessee will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The lessee agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(2) The lessee will, in all solicitations or advertisements for employees placed by or on behalf of the lessee, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(3) The lessee will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the lessee's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The lessee will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The lessee will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the lessee's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the lessee may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The lessee will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The lessee will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: *Provided, however*, That in the event the lessee becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the lessee may request the United States to enter into such litigation to protect the interests of the United States.

(m) *Assignment of oil and gas lease or interest therein.*—As required by applicable law, to file for approval by the lessor any instrument of transfer made of this lease or any interest therein, including assignments of record title, operating agreements and subleases, working or royalty interests, within 90 days from the date of final execution thereof.

(n) *Pipelines to purchase or convey at reasonable rates and without discrimination.*—If owner, or operator, or owner of a controlling interest in any pipeline or of any company operating the same which may be operated accessible to the oil or gas derived from lands under this lease, to accept and convey and, if a purchaser of such products, to purchase at reasonable rates and without discrimination the oil or gas of the Government or of any citizen or company not the owner of any pipeline, operating a lease or purchasing or selling oil, gas, natural gasoline, or other products under the provisions of the Act, or under the provisions of the Act of August 7, 1947 (61 Stat. 913; 30 U.S.C. sec. 351).

(o) *Lands patented with oil and gas deposits reserved to the United States.*—To comply with all statutory requirements and regulations thereunder, if the lands embraced herein have been or shall hereafter be disposed of under the laws reserving to the United States the deposits of oil and gas therein, subject to such conditions as are or may hereafter be provided by the laws reserving such oil or gas.

(p) *Reserved or segregated lands.*—If any of the land included in this lease is embraced in a reservation or segregated for any particular purpose, to conduct operations thereunder in conformity with such requirements as may be made by the Director, Bureau of Land Management, for the protection and use of the land for the purpose for which it was reserved or segregated, so far as may be consistent with the use of the land for the purpose of this lease, which latter shall be regarded as the dominant use unless otherwise provided herein or separately stipulated.

(q) *Protection of surface, natural resources, and improvements.*—To take such reasonable steps as may be needed to prevent operations on the leased lands from unnecessarily: (1) causing or contributing to soil erosion or damaging crops, including forage, and timber growth thereon or on Federal or non-Federal lands in the vicinity; (2) polluting air and water; (3) damaging improvements owned by the United States or other parties; or (4) destroying, damaging or removing fossils, historic or prehistoric ruins, or

# LEASE TERMS (Continued)

artifacts and upon any partial or total relinquishment or the cancellation or expiration of this lease, or at any other time prior thereto when required and to the extent deemed necessary by the lessor to fill any pits, ditches and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the leased land and access roads to their former condition, including the removal of structures as and if required. The lessor may prescribe the steps to be taken and restoration to be made with respect to the leased lands and improvements thereon whether or not owned by the United States. When American antiquities or other objects of historic or scientific interest including but not limited to historic or prehistoric ruins, fossils or artifacts are discovered in the performances of this lease, the item(s) or condition(s) will be left intact and immediately brought to the attention of the contracting officer or his authorized representative.

(r) *Overriding royalties.* Not to create overriding royalties in excess of five percent except as otherwise authorized by the regulations.

(s) *Deliver premises in case of forfeiture.* To deliver up to the lessor in good order and condition the land leased including all improvements which are necessary for the preservation of producing wells.

SEC. 3. The lessor reserves:

(a) *Easements and rights-of-way.*—The right to permit for joint or several use easements or rights-of-way, including easements in tunnels upon, through, or in the lands leased, occupied, or used as may be necessary or appropriate to the working of the same or of other lands containing the deposits described in the Act, and the treatment and shipment of products thereof by or under authority of the Government, its lessees or permittees, and for other public purposes.

(b) *Disposition of surface.* The right to lease, sell, or otherwise dispose of the surface of the leased lands under existing law or laws hereafter enacted, insofar as said surface is not necessary for the use of the lessee in the extraction and removal of the oil and gas therein, or to dispose of any resource in such lands which will not unreasonably interfere with operations under this lease.

(c) *Monopoly and fair prices.* Full power and authority to promulgate and enforce all orders necessary to insure the sale of the production of the leased lands to the United States and to the public at reasonable prices, to protect the interests of the United States, to prevent monopoly, and to safeguard the public welfare.

(d) *Helium.* Pursuant to Section 1 of the Act as amended, the ownership of helium and the right to extract or have it extracted from all gas produced under this lease, subject to such rules and regulations as shall be prescribed by the Secretary of the Interior. If the lessor elects to take the helium, the lessee shall deliver all or any portion of gas containing the same to the lessor, in the manner required by the lessor, at any point on the leased premises, or, if the area is served at the time of production by a gas gathering system owned or operated by the lessee, at any point in that system specified by the lessor, for extraction of the helium by such means as the lessor may provide. The residue shall be returned to the lessee, with no substantial delay in the delivery of the gas produced from the well to the owner or purchaser thereof. Save for the value of the helium extracted, the lessee shall not suffer a diminution of the value of the gas produced from the well, or loss otherwise, including any expense caused solely by the requirement of the delivery of the gas to permit the extraction of helium, for which he is not reasonably compensated. The lessor reserves the right to erect, maintain, and operate any and all reduction works necessary for extraction of helium on the leased premises. The lessee further agrees to include in any contract of sale of gas from the lands subject to this lease provisions setting forth that the lessor owns, and reserves the right to extract or have extracted, any helium in the gas sold, and that the lessor may take the gas from a pipeline carrier or any other gas gathering system and extract the helium and return the gas to the owner thereof, without delay other than that caused by the extraction process, save for the value of the helium, the owner shall not suffer any diminution of the value of the gas from which helium has been extracted, or any other loss arising from the extraction of helium, including any expense caused solely by the requirement of the delivery of the gas to permit the extraction of helium, for which he is not reasonably compensated. It is further agreed that any rights reserved vested in the lessor under this paragraph shall also run to any agent or assignee of the lessor or any purchaser of the rights of the lessor.

(e) *Taking of royalties.*—All rights pursuant to section 36 of the Act to take royalties in amount or in value of production.

(f) *Casing.*—All rights pursuant to section 40 of the Act to purchase casing, and lease or operate valuable water wells.

SEC. 4. *Drilling and producing restrictions.*—It is agreed that the rate of prospecting and developing and the quantity and rate of production from the lands covered by this lease shall be subject to control in the public interest by the Secretary of the Interior, and in the exercise of his judgment the Secretary may take into consideration, among other things, Federal laws, State laws, and regulations issued thereunder, or lawful agreements among operators regulating either drilling or production, or both. After unitization, the Secretary of the Interior, or any person, committee, or State or Federal officer or agency so authorized in the unit plan, may alter or modify from time to time, the rate of prospecting and development and the quantity and rate of production from the lands covered by this lease.

SEC. 5. *Surrender and termination of lease.*—The lessee may surrender this lease or any legal subdivision thereof by filing in the proper land office a written relinquishment, in triplicate, which shall be effective as of the date of filing subject to the continued obligation of the lessee and his surety to make payment of all accrued rentals and royalties and to place all wells on the land to be relinquished in condition for suspension or abandonment in accordance with the applicable lease terms and regulations.

SEC. 6. *Purchase of materials, etc., on termination of lease.*—Upon the expiration of this lease, or the earlier termination thereof pursuant to the last preceding section, the lessee shall have the privilege at any time within a period of 90 days thereafter of removing from the premises all machinery, equipment, tools, and materials other than improvements needed for producing wells. Any materials, tools, appliances, machinery, structures, and equipment subject to removal as above provided, which are allowed to remain on the leased lands shall become the property of the lessor on expiration of the 90-day period or such extension thereof as may be granted because of adverse climatic conditions throughout said period: *Provided*, That the lessee shall remove any or all of such property where so directed by the lessor.

SEC. 7. *Proceedings in case of default.*—If the lessee shall not comply with any of the provisions of the Act or the regulations thereunder or of the lease, or make default in the performance or observance of any of the terms hereof (except that of payment of annual rental which results in the automatic termination of the lease), and such default shall continue for a period of 30 days after service of written notice thereof by the lessor, this lease may be canceled by the Secretary of the Interior in accordance with section 31 of the Act, except that if this lease covers lands known to contain valuable deposits of oil or gas, the lease may be canceled only by judicial proceedings in the manner provided in section 31 of the Act; but this provision shall not be construed to prevent the exercise by the lessor of any legal or equitable remedy which the lessor might otherwise have. Upon cancellation of this lease, any casing, material, or equipment determined by the lessor to be necessary for use in plugging or preserving any well drilled on the leased land shall become the property of the lessor. A waiver of any particular cause of cancellation and forfeiture shall not prevent the cancellation and forfeiture of this lease for any other cause of cancellation and forfeiture, or for the same cause occurring at any other time.

SEC. 8. *Heirs and successors-in-interest.*—It is further agreed that each obligation hereunder shall extend to and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

SEC. 9. *Unlawful interest.*—It is also further agreed that no Member of, or Delegate to, Congress, or Resident Commissioner, after his election or appointment, or either before or after he has qualified and during his continuance in office, and that no officer, agent, or employee of the Department of the Interior, except as provided in 43 CFR 7.4(a)(1), shall be admitted to any share or part in this lease or derive any benefit that may arise therefrom; and the provisions of Sec. 3741 of the Revised Statutes of the United States, as amended (41 U.S.C. Sec. 22) and Secs. 431, 432 and 433, Title 18 U.S. Code, relating to contracts, enter into and form a part of this lease so far as the same may be applicable.

UNITED STATES DEPARTMENT OF THE INTERIOR
**Bureau of Land Management**

(Serial No.)

## LIMITED SURFACE USE STIPULATION

The lessee is given notice that all or portions of the lease area contain special values, are needed for special purposes, or require special attention to prevent damage to surface resources. Any surface use or occupancy within such areas will be strictly controlled. Use or occupancy will be authorized only when the lessee/operator demonstrates that the area is essential for operations and when the lessee/operator submits a surface use and operations plan, which is satisfactory to the Geological Survey and the Federal Surface Management Agency (SMA), for the protection of these special values and existing or planned uses. Appropriate modifications to the imposed restrictions will be made for the maintenance and operation of producing oil and gas wells. After the SMA has been advised of the proposed surface use or occupancy on those lands, and on request of the lessee/operator, the SMA will furnish further data on such areas, which now include but are not limited to:

Reason for Restriction:

Duration of Restriction: (designate months)

Prior to acceptance of this stipulation, the prospective lessee is encouraged to contact the SMA for further information regarding the restrictive nature of this stipulation.

Date

Signature

MT-3109-6 (December 1981)
Formerly MSO 3100-60

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management

Serial No. ______

## Oil & Gas Lease Stipulations

The following stipulations may be modified when specifically approved in writing by the District Engineer, U.S. Geological Survey with the concurrence of the authorized officer of the surface management agency.

### No Surface Occupancy Stipulation

% of Lease

( ) No occupancy or other activity on the surface of the following described lands is allowed under this lease: ( )

(a)

(b)

Reasons for this restriction are:

(a)

(b)

---

### Surface Occupancy Restriction Stipulation (by location)

% of Lease

( ) No ______ will be allowed within: ( )

feet of ______ located within:

feet of ______ located within:

feet of ______ located within:

feet of ______ located within:

This area contains approximately ______ total acres.

---

### Surface Occupancy Restriction Stipulation (timing)

% of Lease

( ) (a) In order to (minimize) (protect) ______ ( )
______ will be allowed only during: ______

(b) In order to (minimize) (protect) ______
______ will be allowed only during: ______

This does not apply to maintenance and operation of producing wells and facilities. Lands within the leased area to which this stipulation applies are described as follows:

(a)

(b)

---

### Road Use Stipulation

% of Lease

( ) The ______ ( )
will not be used as an access road for activities on this lease except as follows:

______ Date

______ Signature

MT-3109-3 (December 1981)
Formerly MSO 3100-55

**UNITED STATES DEPARTMENT OF THE INTERIOR**
**Bureau of Land Management**

____________________
(Serial No.)

## ACTIVITY COORDINATION STIPULATION

This stipulation may be modified when specifically approved in writing by the District Engineer, Geological Survey with concurrence of the authorized officer of the surface management agency.

| | | % of Lease |
|---|---|---|
| ( ) | This lease includes lands within ____________________<br>____________________<br>____________________<br>which has resource values sensitive to high levels of activity. In order to minumize impacts to these resources, special conditions, such as unitization prior to approval of operations, and/or other limitations to spread surface disturbance activities over time and space may be required prior to approval and commencement of any operations on the lease. | ( ) |

________________ ____________________
Date Signature

MT 3109-7 (December 1981)
Formerly MSO 3100-61

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management

Serial No. ______________________

## STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE

### Oil and Gas Lease Stipulations

Any or all of the following stipulations may apply to this lease and may be made less restrictive depending upon the actual onground conditions. The Forest Service (FS) and/or Minerals Management Service (MMS) should be contacted for details regarding the restrictive nature of these stipulations.

**CULTURAL AND PALEONTOLOGICAL RESOURCES** — The FS is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the FS, shall:

1. Contact MMS and the FS to determine if a site specific cultural resource inventory is recommended. If a survey is recommended, then:
2. Engage the services of a qualified cultural resource specialist acceptable to the FS to conduct an intensive inventory for evidence of cultural resource values;
3. Submit a report acceptable to the FS and MMS; and
4. Implement mitigation measures required by the FS to preserve or avoid destruction of cultural resource values. Mitigation may include relocation of proposed facilities, testing and salvage or other protective measures. All costs of the inventory and mitigation will be borne by the lessee or operator, and all data and materials salvaged will remain under the jurisdiction of the U.S. Government as appropriate.

The lessee or operator shall immediately bring to the attention of MMS or the FS any cultural or paleontological resources or any other objects of scientific interest discovered as a result of surface operations under this lease, and shall leave such discoveries intact until directed to proceed by MMS.

**ENDANGERED OR THREATENED SPECIES** — The FS is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1973 by detrimentally affecting endangered or threatened species or their habitats.

The lessee/operator may, unless notified by the FS that the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resource specialist approved by the FS. An acceptable report must be provided to the FS identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.

In order to minimize impacts on endangered or threatened species or their habitat, special conditions, such as unitization prior to approval of operations, and/or other limitations to spread surface disturbing activities over time and space may be required prior to approval and commencement of any operations on the lease.

**ESTHETICS** — To maintain esthetic values, all surface distrubing activities, semipermanent and permanent facilities may require special design including location, painting and camouflage to blend with the natural surroundings and meet the intent of the visual quality objectives of the FS.

**EROSION CONTROL** — Surface disturbing activities may be prohibited during muddy and/or wet soil periods. This limitation does not apply to operation and maintenance of producing wells using authorized roads.

**CONTROLLED OR LIMITED SURFACE USE** — This stipulation may be modified by special stipulations which are hereto attached or when specifically approved in writing by MMS, with the concurrence of the FS. Distances and/or time periods may be made less restrictive depending on the actual onground conditions. The prospective lessee should contact the FS for more specific locations and information regarding the restrictive nature of this stipulation.

The lessee/operator is given notice that the lands within this lease may include special areas and that such areas may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Any surface use or occupancy within such special areas will be strictly controlled or, **if absolutely necessary**, excluded. Use or occupancy will be restricted only when MMS and/or the FS demonstrates that the restriction is necessary for the protection of such special areas and existing or planned uses; however, **reasonable lease occupancy will not be precluded** unless specified in additional stipulations attached hereto. Appropriate modifications to imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the FS has been advised of specific proposed surface use or occupancy on the leased lands, and on request of the lessee/operator, the FS will furnish further data on any special areas. Such restrictions may include limitations or exclusion of activities which occur within:

> 500 feet from perennial and ephemeral water courses and bodies, springs, flood plains, riparian areas, and water supplies;
>
> 500 feet from roads and trails, buildings and structures, sites eligible for or designated as National Register Sites or Research Natural Areas, visually sensitive areas and recreation areas including those managed for primitive recreation values;
>
> Essential habitat of State and Federal sensitive species including wildlife, raptors, fish and plants, and crucial wildlife ranges including but not limited to: winter range from December 1 to May 15; birthing to reproduction areas (e.g. calving, fawning) from April 15 to June 30; migration routes from November 1 to December 31; spawning sites from May 1 to July 1 or appropriate from September 1 to March 30; grouse strutting grounds and nesting areas within ½ mile; and within ½ mile of raptor nests from February 1 to July 31;
>
> Seasonal road closures, roads for special uses, specified roads during heavy traffic periods and on areas having restrictive offroad designations;
>
> On steep slopes (over 30 to 60 percent), on slopes or soils which have a high potential for or are currently experiencing mass movement (slumps, slides, flows) or which are extremely erodable.

______________________ Date

______________________ Lessee's Signature

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management

Serial No. ______________________

## STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE

Oil and Gas Lease Stipulations

Stipulations may be modified when specifically approved in writing by the District Engineer, Geological Survey, with concurrence of the authorized officer of the surface management agency.

% of Lease

### Further Planning Area Stipulation

(  ) The following described lands embraced in this (lease, permit, license) were identified in the Roadless Area Review and Evaluation (RARE II) decision document as requiring further planning: (  )

Future planning may identify all or part of these lands as suitable for wilderness, and the lands so identified may ultimately be designated as wilderness. Information made available to the Forest Service regarding discoveries of mineral deposits on these lands will be considered in the planning process and may be key factors in the land allocation.

Any terms of this (lease, permit, license) to the contrary notwithstanding, the following terms shall apply to the above described lands:

1. Only exploration activities for the purposes of discovering and disclosing the extent of mineral deposits is allowed, until development and production operations are specifically concurred in by the Forest Service based on a land management plan and/or a specific environmental analysis of an operating plan.

2. Exploration plans must be specifically approved by the Geological Survey and concurred in by the Forest Service. The Forest Service will agree to reasonable access for conducting necessary exploration operations.

3. Any lands covered by this (lease, permit, license) which Congress designates as wilderness shall become subject to the provisions of the applicable wilderness legislation, and the Secretary of Agriculture's regulations and Forest Service policies pertaining thereto.

4. The (lessee, permittee, licensee) will be responsible, as he deems necessary to protect his interest, for initiating requests to the Department of the Interior for suspension of (lease, permit, license) terms, rental, or minimum royalties. The Forest Service does not intend that the inclusion of this stipulation be construed as a basis to deny a request for suspension.

5. Until these lands are allocated to non-wilderness purposes, by a land management plan or specific environmental analysis and decision, mineral-related operations are subject to the following terms:

   a. Construction of access ways and operation sites will not be permitted in areas of extremely high environmental sensitivity where such construction would cause serious and irreparable environmental damage.

   b. Access way construction will be permitted only where existing access ways are inadequate or other methods of access are impractical.

   c. Access ways will be built to a standard no higher than required for passage of equipment and support personnel, and to protect surface resources.

   d. The access ways and other areas of operation will be reclaimed, as soon as they have served their purpose, to a condition as near as practical to the surface condition existing prior to the authorized use of the lands.

The above checked stipulations are hereby accepted.

______________________ Date

______________________ Signature

MT 3109-5 (December 1981)
(Formerly MSO 3100-56)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

## SURFACE DISTURBANCE STIPULATIONS

**Area Oil and Gas Supervisor or District Engineer** *(Address, include zip code)*

| | |
|---|---|
| **Management Agency** *(name)* | **Address** *(include zip code)* |

1. Notwithstanding any provision of this lease to the contrary, any drilling, construction, or other operation on the leased lands that will disturb the surface thereof or otherwise affect the environment, hereinafter called "surface disturbing operation," conducted by lessee shall be subject, as set forth in this stipulation, to prior approval of such operation by the Area Oil and Gas Supervisor in consultation with appropriate surface management agency and to such reasonable conditions, not inconsistent with the purposes for which this lease is issued, as the Supervisor may require to protect the surface of the leased lands and the environment.

2. Prior to entry upon the land or the disturbance of the surface thereof for drilling or other purposes, lessee shall submit for approval two (2) copies of a map and explanation of the nature of the anticipated activity and surface disturbance to the District Engineer or Area Oil and Gas Supervisor, as appropriate, and will also furnish the appropriate surface management agency named above, with a copy of such map and explanation.

An environmental analysis will be made by the Geological Survey in consultation with the appropriate surface management agency for the purpose of assuring proper protection of the surface, the natural resources, the environment, existing improvements, and for assuring timely reclamation of disturbed lands.

3. Upon completion of said environmental analysis, the District Engineer or Area Oil and Gas Supervisor, as appropriate, shall notify lessee of the conditions, if any, to which the proposed surface disturbing operations will be subject.

Said conditions may relate to any of the following:

(a) Location of drilling or other exploratory or developmental operations or the manner in which they are to be conducted;

(b) Types of vehicles that may be used and areas in which they may be used; and

(c) Manner or location in which improvements such as roads, buildings, pipelines, or other improvements are to be constructed.

Form 3109–5 (August 1973)

GPO 849-208

Form 3109–3
(June 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

## STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE*

The lands embraced in this lease or permit being under the jurisdiction of the Secretary of Agriculture, the lessee or permittee hereby agrees:

(1) To conduct all operations authorized by this lease or permit with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover; unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disturb the surface of the lands within 200 feet of any building standing on the lands and whenever required, in writing, by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches, and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth.

(2) To do all in his power to prevent and suppress forest, brush, or grass fires on the lands and in their vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee or permittee shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the lands at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires on or originating on the lands or on adjacent areas or caused by the negligence of the lessee or permittee or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: *Provided*, that if the lessee or permittee, his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee or permittee shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the area involved except at established camps, and shall enforce this prohibition by all means within his power: *Provided*, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee or permittee, smoking may be permitted.

The lessee or permittee shall not burn rubbish, trash, or other inflammable materials *except* with the consent of the authorized representetive of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the lands during the forest, brush, or grass fire season, *except* as authorized to do so or on areas approved by such representative.

The lessee or permittee shall build or construct such fire lines or do such clearing on the lands as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the

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*This form of stipulation may be used in connection with leases and permits issued under the Acts of February 25, 1920, as amended (30 U.S.C. 181 *et seq.*), August 7, 1947 (30 U.S.C. 351 *et seq.*); February 7, 1927, as amended (30 U.S.C. 281 *et seq.*), April 17, 1926, as amended (30 U.S.C. 271 *et seq.*), June 28, 1944 (58 Stat. 483–485); September 1, 1949 (30 U.S.C. 192c), June 30, 1950 (16 U.S.C. 508b), or under the authority of any of the Acts cited in Section 402 of the President's Reorganization Plan No. 3 of 1946 (5 U.S.C. 133y–16, Note).

exercise of the privileges authorized by this lease or permit, and shall maintain such fire tools at his headquarters or at the appropriate location on the lands as are deemed necessary by such representative.

(3) In the location, design, construction, and maintenance of all authorized works, buildings, plants, waterways, roads, telegraph or telephone lines, pipelines, reservoirs, tanks, pumping stations, or other structures or clearance, the lessee or permittee shall do all things reasonably necessary to prevent or reduce to the fullest extent scarring and erosion of the lands, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease or permit causes damage to the watershed or pollution of the water resources, the lessee or permittee agrees to repair such damage and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized representative of the Secretary of Agriculture.

(4) If in the opinion of the authorized representative of the Secretary of Agriculture, the lands are valuable for watershed protection, the lessee or permittee shall provide for control of surface runoff and return the affected area to as productive condition as practicable.

(5) To pay the lessor or permitter or his tenant or the surface owner or his tenant, as the case may be, for any and all damage to or destruction of property caused by the lessee's or permittee's operations hereunder; to save and hold the lessor or permitter or the surface owner or their tenants harmless from all damage or claims for damage to persons or property resulting from the lessee's or permittee's operations under this lease or permit.

(6) To recognize existing uses and commitments, in the form of Department of Agriculture grazing, timber cutting, and special use permits, water developments, ditch, road, trail, pipeline, telephone line, and fence rights-of-way and other similar improvements, and to conduct his operations so as to interfere as little as possible with the rights and privileges granted by these permits or with other existing uses.

(7) To install and maintain cattle guards to prevent the passage of livestock in any openings made in fences by the lessee or permittee or his contractors to provide access to the lands covered by this lease or permit for automotive and other equipment.

(8) If lessee or permittee shall construct any camp on the lands, such camp shall be located at a place approved by the authorized representative of the Secretary of Agriculture, and such representative shall have authority to require that such camp be kept in a neat and sanitary condition.

(9) To comply with all federally-approved rules and regulations of the Secretary of Health, Education, and Welfare governing the emission of pollutants into the air from activities which are embraced in this lease or permit.

(10) To comply with all the rules and regulations of the Secretary of Agriculture governing the national forests or other lands under his jurisdiction which are embraced in this lease or permit.

(11) Unless otherwise authorized, prior to the beginning of operations to appoint and maintain at all times during the term of this lease or permit a local agent upon whom may be served written orders or notices respecting matters contained in this stipulation, and to inform the authorized representative of the Secretary of Agriculture, in writing, of the name and address of such agent. If a substitute agent is appointed, the lessee or permittee shall immediately so inform the said representative.

(12) To address all matters relating to this stipulation to

at

who is the authorized representative of the Secretary of Agriculture, or to such other representative as may from time to time, be designated, provided that such designation shall be in writing and be delivered to the lessee or permittee or his agent.

(Signature of Lessee)

GPO 880-293

# APPENDIX P

## WITHDRAWAL INVENTORY
December 31, 1980
Flathead National Forest

### Existing Withdrawals

| Serial No. | Name of Site | Township | Range | Acres | Scheduled Date of Review |
|---|---|---|---|---|---|
| M012788 | Coram Experimental Forest | 30 N. | 18 W. | 600.00 | 1990 |
| M012788 | Coram Experimental Forest | 30 N. | 19 W. | 3,908.37 | 1990 |
| M012788 | Coram Experimental Forest | 31 N. | 18 W. | 610.00 | 1990 |
| M012788 | Coram Experimetnal Forest | 31 N. | 19 W. | 2,960.00 | 1990 |
| M073084 | Baptiste Lookout Adm. Site | 27 N. | 16 W. | 10.00 | 1990 |
| M073084 | Condon Ranger Station | 21 N. | 17 W. | 250.00 | 1990 |
| M073084 | Cooney Lookout Adm. Site | 20 N. | 16 W. | 10.00 | 1990 |
| M073084* | Desert Mountain Lookout | 31 N. | 19 W. | 10.00 | 1990 |
| M073084* | Elbow Lookout Adm. Site | 19 N. | 17 W. | 7.50 | 1990 |
| M073084 | Firefighter Lookout Adm. Site | 30 N. | 18 W. | 10.00 | 1990 |
| M073084* | Gary Lookout Adm. Site | 31 N. | 17 W. | 10.00 | 1990 |
| M073084* | Jim Creek Lookout | 21 N. | 17 W. | 10.00 | 1990 |
| M073084 | Mission Lookout Adm. Site | 25 N. | 18 W. | 10.00 | 1990 |
| M1170* | Bear Creek Middle Fork Picnic | 29 N. | 15 W. | 36.53 | 1990 |
| M1170* | Cascade Creek Nyack Rec. Area | 31 N. | 17 W. | 186.25 | 1990 |
| M1170* | Cascadilla Rec. Area | 31 N. | 17 W. | 119.36 | 1990 |
| M1170 | Crossover Rec. Area | 26 N. | 16 W. | 93.00 | 1990 |
| M1170 | Devil Creek Campground | 29 N. | 15 W. | 64.95 | 1990 |
| M1170 | Devil's Corkscrew Campground | 27 N. | 17 W. | 10.00 | 1990 |
| M1170 | Emery Bay Rec. Area | 30 N. | 18 W. | 174.00 | 1990 |
| M1170 | Fielding Rec. Area | 29 N. | 14 W. | 138.75 | 1990 |
| M1170 | Flathead Picnic Grounds | 25 N. | 19 W. | 40.00 | 1990 |
| M1170* | Halfmoon Rec. Area | 31 N. | 19 W. | 60.01 | 1990 |
| M1170 | Holland Lake Rec. Area | 19 N. | 16 W. | 30.00 | 1990 |
| M1170 | Holland Lake Rec. Area | 20 N. | 16 W. | 591.30 | 1990 |
| M1170 | Lindberg Lake Rec. Area | 19 N. | 17 W. | 179.15 | 1990 |
| M1170 | Murray Creek Rec. Area | 29 N. | 17 W. | 99.50 | 1990 |
| M1170* | Poala Creek Rec. Area | 30 N. | 16 W. | 57.50 | 1990 |
| M1170 | Summit Rec. Area | 30 N. | 13 W. | 16.00 | 1990 |
| M41875* | Coram Bridge Adm. Site | 31 N. | 19 W. | 40.00 | 1990 |
| M41875 | Danaher Creek Adm. Site | 18 N. | 11 W. | 140.00 | 1990 |
| M41890 | Big Prairie Ranger Station | 20 N. | 13 W. | 200.00 | 1990 |
| M41890* | Black Bear Ranger Station | 23 N. | 14 W. | 174.00 | 1990 |
| M41890* | White River Ranger Station | 21 N. | 13 W. | 135.00 | 1990 |
| M41893* | Coal Bank Adm. Site | 27 N. | 17 W. | 75.00 | 1990 |
| M41893 | Shaw Creek Adm. Site | 19 N. | 14 W. | 52.50 | 1990 |
| M41899 | Coram Ranger Station | 31 N. | 19 W. | 80.00 | 1990 |
| M41899 | Holland Lake Ranger Station | 20 N. | 16 W. | 80.00 | 1990 |
| M41902* | Riverside Ranger Station | 29 N. | 18 W. | 123.00 | 1990 |
| M41902* | Spotted Bear Lake Ranger Sta. | 25 N. | 15 W. | 220.00 | 1990 |
| M41928* | Essex Adm. Site | 29 N. | 16 W. | 51.00 | 1990 |
| M41930 | Swan Lake Adm. Site | 25 N. | 18 W. | 100.00 | 1990 |

| Serial No. | Name of Site | Township | Range | Acres | Scheduled Date of Review |
|---|---|---|---|---|---|
| M41942* | Echo Adm. Site | 28 N. | 19 W. | 36.22 | 1990 |
| M41943 | Beardance Adm. Site | 25 N. | 19 W. | 39.58 | 1990 |
| M41944 | Coram Ranger Station | 30 N. | 19 W. | 68.69 | 1990 |
| M41951* | Hungry Horse Ranger Station | 30 N. | 18 W. | 83.00 | 1990 |
| M41951* | Hungry Horse Ranger Station | 30 N. | 19 W. | 78.44 | 1990 |
| M42094 | Star Meadow Ranger Station | 30 N. | 24 W. | 78.28 | 1990 |
| M42097* | Truman Creek Adm. Site | 26 N. | 22 W. | 102.00 | 1990 |
| M42110* | Pleasant Valley Adm. Site | 28 N. | 25 W. | 80.00 | 1990 |
| M42111* | Squaw Meadow Ranger Station | 29 N. | 25 W. | 70.00 | 1990 |
| M44296* | Adm. Site Station 13 | 34 N. | 19 W. | 80.00 | 1990 |
| M44296* | Moran Ranger Station | 34 N. | 21 W. | 21.17 | 1990 |
| M44296* | Olney Ranger Station | 32 N. | 24 W. | 98.97 | 1990 |
| M44297* | McGee Meadow Site | 33 N. | 19 W. | 87.50 | 1990 |
| M45201 | Basin Creek Adm. Site | 19 N. | 12 W. | 166.00 | 1990 |
| M45201 | Hahn Creek Ranger Station | 19 N. | 13 W. | 104.00 | 1990 |
| M45705 | Tally Lake Adm. Site | 31 N. | 23 W. | 127.00 | 1990 |
| M45705 | Tally Lake Adm. Site | 31 N. | 24 W. | 12.00 | 1990 |
| M46066 | Arthur Ranger Station | 29 N. | 14 W. | 160.00 | 1990 |
| M44299* | Sulphur Springs | 37 N. | 16 W. | 43.00 | 1990 |

*Sites in which the Forest Supervisor recommended revocation of mineral withdrawal. 2760 memos of 2/7/83 and 3/31/83.

Totals

|  | No. Serialized Cases | No. Sites | Acres |
|---|---|---|---|
| Existing Withdrawals | 23 | 55 | 13,265.52 |
| Recommended Revocation | 15 | 27 | 2,073.95 |

CRITERIA TO USE IN EVALUATION OF EXISTING AND PROPOSED WITHDRAWALS

1. **Evaluation Criteria**

   A. Existing Withdrawals

      1. Is the land still being used for the purpose for which it was withdrawn?
         a. If yes, is the area withdrawn too small or too extensive?
         b. Have conditions changed so that the lands are more valuable for other uses? If no, then:

      2. Are there other ways available to protect the resource values (for instance, existing statutes and regulations, rights-of-way, cooperative agreements)? If no then:

3. Are the values at risk of such a nature that a significant financial, social, or cultural loss could occur?
    - a. What is the monetary value of the physical improvements at risk?
    - b. What is the current and projected use demand?
    - c. If the withdrawal is for a proposed development, have funds been allocated for this project?
    - d. Is the resource unique and/or irreplaceable? If yes, then:

4. Does the withdrawal area have a high mineral potential or are there nearby mining claims or mining activities? If yes, then:

5. Initiation of withdrawal action recommended.

B. Proposed Withdrawals

Follow steps 2 through 5.

2. Processing Program and Review

A. Determination of need based on criteria section.
B. Process using requirements outlines in statutes and regulations.

1. Section 204 of FLPMA (P.L. 94-579).
2. 43 CFR 2310.

C. Review of existing withdrawals as shown in the above inventory will be completed by 1991. A review of existing and future withdrawals will again occur every 5 years.

# APPENDIX Q

## LANDTYPE GUIDELINES
Flathead National Forest

The following guidelines are intended to account for opportunities and limitations associated with the physical characteristics of landtypes found on the Flathead National Forest. They serve general project planning needs.

These guidelines apply to landtypes in all Management Areas, unless the Management Area direction is more specific or deviation is supported by an environmental analysis. Additional description and occurrence of the Forest landtypes are available in "Flathead National Forest Standards and Guidelines for Landtypes," Martinson, 1981.

### Group 1 - Flood Plains

Landtypes: 10-2, Alluvial Lands, Well Drained
10-3, Alluvial Lands, Poorly Drained

17,265 acres

1. No Surface Occupancy stipulation will apply to oil and gas activities. Permanent developments other than specially designed roads, pipelines, and/or buried utilities will not be allowed due to the presence of thin soils, compactible soils, soils with low bearing strength and/or the potential for flooding, frost pockets, or frost heaving.
2. Permitted livestock grazing will be excluded or managed to prevent soil compaction, siltation, and contamination of water.
3. Uneven-aged silvicultural systems will normally be utilized on suitable timber areas.
4. Ground-disturbing activities must be conducted so as to minimize displacement of shallow surface soil on Landtype 2.
5. The poorly drained soils of Landtype 3 can be protected by the use of cable yarding systems or winter logging.
6. Special consideration must be taken in the design of sanitation facilities.

### Group 2 - Wetlands

Landtypes: 12-3, Organic Soils, Poorly Drained
14-3, Silty Lacustrine Deposits, Poorly Drained

6,058 acres

1. Generally, the No Surface Occupancy stipulation will apply; however, specially designed roads, pipelines, and/or buried utilities which are essential and for which there is no environmentally suitable alternative locations available will be permitted for oil and gas activities.

2. These landtypes are not capable of commercial timber management.

3. Forage productivity makes these landtypes often suitable for seasonal grazing use by domestic livestock.

4. Road construction requires special consideration.

**Group 3 - Avalanche Fans Talus**

2,005 acres

Landtypes: 17-8, Avalanche Fans, 20-50% slopes

1. Permanent oil and gas developments should be avoided due to sliding rocks and seasonal ice and snow avalanches. Surface occupancy for drill pads, storage facilities, or other structures will not be permitted.

2. These landtypes are not capable of commercial timber management.

**Group 4 - High Alpine Basins**

74,244 acres

Landtypes: 21-7, Alpine Glacial Till-Residual Soils, 0 to 20% slopes
21-8, Alpine Glacial Till-Residual Soils, 20 to 40% slopes

1. These landtypes have sites that range from not capable of commercial timber management to moderately productive for commercial timber management. Short growing season, cold temperatures, and snow persistence limit tree growth, especially during the regeneration phase and must be considered in silvicultural prescriptions on suitable timber areas. Probable windthrow of trees should limit the use of the shelterwood silvicultural system.

2. Seep water and high rock content of soils along with short operating season should be considered in project planning.

3. Domestic livestock grazing potential is very low. These landtypes are usually economically unsuitable for commercial transitory range allotment management. Casual and permitted recreational stock use can usually be accommodated.

### Group 5 - Mass Failure Lands

12,584 acres

Landtypes: 31, Mass Failure Lands, Himmocky, 10 to 13% Slopes
32, Mass Failure Lands, Benchy, on 30 to 60% Slopes

1. Permanent developments for oil and gas activities should be avoided due to historic slope instability and ground water concentrations. Special evaluation and design will be required before permitting roads or other surface occupancy.

2. The landtype is capable of commercial timber management but is limited by the broken topography making access, site preparation, and silvicultural operations more costly. Skyline and aerial logging systems which yard timber to permanent transportation facilities on adjacent stable landtypes are preferred.

3. Onsite evaluation of the landtype is necessary to ensure proper design of project activities.

### Group 6 - Alluvial Fans, Outwash Plains, and Reworked Tills 0-40% Slopes

38,948 acres

Landtypes: 16, Alluvial Fans, 5 to 30% Slopes
27-7, Loamy Glacial Drift, 0 to 20% Slopes
27-8, Loamy Glacial Drift, 20 to 40% Slopes
28-7, Glacial Outwash, 0 to 20% Slopes
24-7, Sandy Glacial Till, Residual Soils, 0 to 20% Slopes
24-8, Sandy Glacial Till, Residual Soils, 20 to 40% Slopes

1. These landtypes are usually well suited to surface occupancy by oil and gas activities due to gentle slopes and well-drained soils that are less susceptible to compaction and have good bearing capacity.

    a. Landtype 16 is subirrigated with seep spots common.

    b. Shifting stream channels are possible on Landtype 16, and roads should be located at the apex of the fan.

    c. Subsurface water is easily developed but is often subject to contamination. Sanitation systems require special evaluation.

2. These landtypes are usually capable of commercial timber management. Water holding capacity limits silvicultural system options on Landtypes 27 and 28. Landtypes 28 and 16 have thin topsoil, and soil displacement should be avoided. Landtype 28 has shallow rooted trees and windthrow may be a problem. Cold air ponding can pose a

regeneration problem on AF/Vaca Habitat Type. Tractor yarding is the preferred yarding system.

3. These landtypes are capable and usually suitable for permitted domestic livestock grazing.

Group 7 - Silty Glacial Tills 0-40% Slope

236,336 acres

Landtypes:
14-7, Silty Lucustrine, Well Drained, 0 to 20% Slopes
26A-7, Silty Glacial Till, Calcareous Substratum, 0 to 20% Slopes
26A-8, Silty Glacial Till, Calcareous Substratum, 20 to 40% Slopes
26C-7, Silty Glacial Till, Slightly Acid Substratum, 0 to 20% Slopes
26C-8, Silty Glacial Till, Slighty Acid Substratum, 20 to 40% Slopes
23-8, Sandy Glacial Till, Residual Soils, 20 to 40% Slopes

1. These landtypes are usually capable of commercial timber management and surface occupancy for oil and gas activities. The primary limitation is soils subject to surface and subsurface compaction.

2. Measures to mitigate compaction of soils on the landtypes must be evaluated and implemented for all projects using heavy equipment. Measures may include:

   a. Cable yarding with broadcast burning.

   b. Restricting operating seasons to periods when soil moisture conditions or frost will protect soil.

   c. Restricting tractors to "dedicated trails" which confines impact to an acceptable area with broadcast burning.

   d. Some combination of the above.

3. The tree rooting zone is limited to less than 40 inches due to the firm nature of tills. Windthrow hazard needs to be considered in determining of the silvicultural system and yarding system to be used.

4. Landtype 14 is subject to frost heave and has moderate bearing capacity. Trails may be seasonally muddy.

5. Rolled grades, cross drains, surfacing, and grass vegetation can help reduce sedimentation from road surfaces. Where possible cut and fill slopes should be seeded the same season they are constructed to minimize sediment production from exposed soils.

6. These landtypes are usually suitable for domestic livestock grazing, but concentrated cattle use should be restricted until regeneration has occurred and trees are tall enough to withstand grazing.

Group 8 - Sandy Glacial Tills 0-40% Slopes

36,169 acres

Landtypes:

26D-7, Sandy Glacial Till, 0 to 20% Slopes
26D-8, Sandy Glacial Till, 20 to 40% Slopes
26G-7, Silty Glacial Till, Caleareous Substratum, Warm and Dry, 0 to 20% Slopes
26G-8, Silty Glacial Till, Caleareous Substratum, Warm and Dry, 20 to 40% Slopes
26J-7, Loamy Glacial Till, 0 to 20% Slopes
26J-8, Loamy Glacial Till, 20 to 40% Slopes

The same guidelines apply as for Group 7 above. The primary difference is the low water holding capacity and lower inherent fertility of these soils. This results in shorter season of susceptibility to compaction, lower vegetative productivity, and more difficult revegetation. Mulch is often desirable to aid in establishing new vegetation. Frequent applications of small amounts of maintenance fertilizer may also facilitate establishment of new vegetation.

Group 9 - Clayey Glacial Tills 0-40% Slope

9,603 acres

Landtypes:

26I-7, Clayey Glacial Tills, 0 to 20% Slopes
26I-8, Clayey Glacial Tills, 20 to 40% Slopes
26L-7, Clayey Glacial Tills, Old Surface, 0 to 20% Slopes
26L-8, Clayey Glacial Tills, Old Surface, 20 to 40% Slopes

The same guidelines apply as for Group 7 above. The primary difference is that these soils average higher productivity and high retention of soil moisture. The result is that the season of susceptibility for compaction is longer than for the other groups. Some sites may never dry enough to operate heavy equipment without severe compaction.

2. The potential for rutting, sediment production, and slumping of road cutslopes is high. Surfacing or seasonal use of roads is usually necessary for roads on these landtypes.

### Group 10 - Steep Glacial Tills 40-60% Slopes

69,891 acres

Landtypes:
- 21-9, Alpine Glacial Tills, Residual Soils, 40 to 60%Slopes
- 23-9, Silty Glacial Tills, Residual Soils, 40 to 60% Slopes
- 24-9, Sandy Glacial Tills, Residual Soils, 40 to 60% Slopes
- 26A-9, Silty Glacial Tills, Calcareous Substratum, 40 to 60% Slopes
- 26C-9, Silty Glacial Tills, Slightly Acid Substratum, 40 to 60% Slopes
- 26D-9, Sandy Glacial Tills, 40 to 60% Slopes
- 26J-9, Loamy Glacial Tills, 40 to 60% Slopes

1. These landtypes are capable of commercial timber management and limited surface developments for oil and gas. Limiting soil factors include the potential for sediment production, soil displacement, and cutslope ravelling.

2. On these landtypes, yarding options are limited to cable or aerial systems due to steep slopes.

3. Broadcast burning is the preferred site preparation method due to steep slopes.

4. Hand firelines should be used as appropriate.

5. Rolled grades, cross drains, surfacing, and seeding of cut and fill slopes the same season they are constructed are needed to minimize sediment production.

6. These landtypes are capable of transitory range forage production, but concentrated cattle use can compact soils.

### Group 11 - Residual Soils 20-40% Slopes

77,726 acres

Landtypes: 57-8, Residual Soils, 20 to 40% Slopes

1. These landtypes are capable of commercial timber management, transitory range forage production, and surface occupancy.

2. Tractor systems for logging and slash disposal are perferred. Their use may be limited by the need to minimize displacement of thin productive surface soil. Some large debris should be left for nutrient recycling.

3. Soils are droughty and south slopes are difficult to revegetate. Mulch is recommended.

### Group 12 - Residual Soils 40-60% Slopes

Landtypes: 57-9, Residual Soils, 40 to 60% Slopes

1. These landtypes are capable of commercial timber management and limited surface occupancy. Limiting soil factors include potential for soil displacement, steep slopes, shallow to moderately deep droughty soils with high rock content and low productivity.

2. On these landtypes, yarding options are limited to cable or aerial systems.

3. Broadcast burning is the preferred site preparation method due to steep slopes.

4. Nonconcentrated cross drainage such as outsloped roads without ditches are functional. Cut and fill slopes and dozer lines difficult to revegetate. Seeding should be done in the same season as soil disturbance occurs. Mulch should be used on south aspects.

5. These landtypes are capable of transitory range forage production but domestic livestock use is limited due to steep slopes and low vegetative productivity.

### Group 13 - Alpine Ridges and Rocklands 30-60% Slopes

222,052 acres

Landtypes:
54, Slab Rock, High Elevation, 30 to 60% Slopes
55, Slab Rock, Steep, 30 to 60% Slopes
72, Glacial Breaklands, Cirque Headwalls and Alpine Ridges, +60% Slopes
75, Structural Breaklands, Scarp Rock, +60% Slopes

These landtypes are not capable of commercial timber management, surface occupancy, or permitted domestic livestock use due to the steepness of slope, exposed rock, and lack of soil.

### Group 14 - Glacial Trough Walls +60% Slopes

220,132 acres

Landtypes: 73, Glacial Breakland, Trough Walls, +60% Slopes

1. Soils are complexes of plastered glacial tills, thin residual soils, and rocklands resulting in portions of the landtypes being capable of commercial timber management.

2. On these landtypes, yarding options are limited to longline skyline and aerial systems due to generally steep slopes and adverse resource impacts associated with road construction. Specially designed roads requiring high investments in construction could be built but are not recommended.

3. Hazard reduction and site preparation is expensive due to steep slopes and limited burning days.

4. These landtypes are not capable of surface occupancy for oil and gas activities, except for specially engineered roads.

5. These landtypes are not suitable for domestic livestock use.

6. South slopes have low vegetative productivity and are difficult to revegetate.

Group 15 - Fluvial Breaklands +60% Slope

Landtypes: 74, Fluvial Breaklands, +60% Slopes

15,386 acres

1. This landtype is capable of commercial timber management, but timber management opportunities are limited by steep, thin soils adjacent to the streams which formed the landtype.

2. Sediment delivery occurs very rapidly. Soil lies currently at the natural angle of repose and is easily disturbed. Roads are usually not permitted.

3. On these landtypes, yarding options are limited to cable or aerial logging systems.

4. These landtypes are not capable of surface occupancy for oil and gas activities.

Group 16 - Structural Breaklands +60% Slopes

Landtypes:
76, Structural Breaklands, Weak Direction, +60% Slopes
77, Structural Breaklands, Moderate Disection, +60% Slopes
78, Structural and Glacial Breaklands, Warm and Dry, +60% Slopes

119,293 acres

1. These landtypes are usually capable of commercial timber management but timber management opportunities are limited by steep slopes and high costs. Yarding options are generally limited to longline cable or aerial systems.

2. Hazard reduction and site preparation are expensive due to steep slopes and limited burning days.
3. South slopes are droughty, have low vegetative productivity, and are difficult to revegetate.
4. These landtypes are not capable of surface occupancy for oil and gas activities, except for specially engineered roads.
5. These landtypes are not suitable for permitted domestic livestock use.

# APPENDIX R

## WILDERNESS RECREATION OPPORTUNITY CLASS DESCRIPTIONS AND GUIDELINES

Opportunity Classes represent a spectrum of wilderness experience opportunities within the Bob Marshall Wilderness Complex (BMWC). These classes describe existing areas within the complex having different resource and social conditions. They also identify management actions that are acceptable within each class. Inherent in the definitions are different levels of resource and social conditions acceptable for each class in the spectrum.

Three components are used to describe opportunity classes: resource, social, and managerial settings. Each component has several elements that are used to describe differences between opportunity classes. These descriptions provide managers, researchers, and users with common definitions for terms used to describe areas within the complex.

Opportunity class definitions for the BMWC were developed through analyses of Task Force member comments, examples from other areas, inventory data for sample areas within the complex, and input from wilderness researchers. The following are definitons of each class including descriptions of the resource, social, and managerial settings. Also included is a table to allow the reader to compare differences between classes.

### OPPORTUNITY CLASS I

#### A. RESOURCE SETTING

Characterized by an unmodified natural environment. Ecological and natural processes are not measurably affected by the actions of users. Environmental impacts are minimal, restricted to temporary loss of vegetation where camping occurs and along some livestock travel routes, typically recover on an annual basis and are subtle in nature and generally not apparent to most visitors.

#### B. SOCIAL SETTING

Provides an outstanding opportunity for isolation and solitude free from evidence of human activities and with very infrequent encounters with users. The user has outstanding opportunities to travel across country utilizing a maximum degree of outdoor skills, often in an environment that offers a very high degree of challenge, self-reliance and risk. Interparty contacts will be very few while traveling and rare to nonexistent at the campsite.

## C. MANAGERIAL SETTING

Management will strongly emphasize sustaining and enhancing the natural ecosystem. Direct onsite management of visitors will be seldom. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads or boundary portals. Contact of visitors within this class by Forest personnel will be mostly reactive and by invitation, with discussion items limited to what visitors want to know. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefits to all. Formal regulations, orders and/or permits will be considered only when less restrictive regulations or programs have consistently failed to achieve desired goals and objectives. Infrequent patrols and monitoring of conditions by appropriate State and Federal agency personnel will be conducted only as necessary to achieve management objectives. All scientific and ecological monitoring actions will be scheduled to meet social setting criteria. Trails will not be constructed and maintenance will be conducted only to protect the resource. No trail signs will be present, and no facilities of any kind will be provided or permitted, including lookouts and radio transmitter stations.

# OPPORTUNITY CLASS II

## A. RESOURCE SETTING

Characterized by an essentially unmodified natural environment. Ecological and natural processes and conditions are minimally affected by the action of users. Environmental impacts are low and restricted to minor losses of vegetation where camping occurs and along most travel routes. Most impacts recover on an annual basis and will be apparent to only a low number of visitors.

## B. SOCIAL SETTING

High opportunity for exploring and experiencing isolation from the sights and sounds of man with the probability of encountering other users being low. The user has good opportunity for experiencing independence, closeness to nature, tranquility, and self-reliance through the application of primitive recreation skills. These opportunities occur in an environment that offers a high degree of challenge and risk. Interparty contacts will be low on the trail and fairly low at the campsite, with parties often camped in isolation.

## C. MANAGERIAL SETTING

Management will emphasize sustaining and enhancing the natural ecosystem. Direct onsite management will involve minimum visitor contact during the normal use season. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailhead and boundary portals. Contact of visitors by Forest personnel will be mostly reactive and by invitation. In addition to what the visitor wants to know, the opportunity will be seized to present other pertinent site-specific messages. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives and permits may be considered only when light-handed, less restricted measures have failed to achieve desired goals and objectives. Signs will be permitted within the area and will provide only the minimum information necessary to protect the wilderness resource. Trails will normally be constructed, maintained, and managed to accommodate light and infrequent travel. Routes will be maintained only for resource protection and minimal user safety. Modification of the natural environment would be minimal. The route should provide the user with an opportunity for testing skills and experiencing a sensation of physical exertion and a feeling of accomplishment. Facilities will be provided, only in a few extreme cases, and those that are will be permitted only for resource protection and will use only native materials.

## OPPORTUNITY CLASS III

### A. RESOURCE SETTING

Characterized by an essentially unmodified natural environment where ecological and natural processes are in a few areas moderately affected by the action of users. Environmental impacts are moderate, with most areas along travel routes and near campsites showing moderate losses of vegetation. Impacts in some areas often persist from year to year and are apparent to a moderate number of visitors.

### B. SOCIAL SETTING

Moderate opportunities for exploring and experiencing isolation from the sights and sounds of man, with the probability of encountering other users low to moderate. The user has moderate opportunities for experiencing independence, closeness to nature, tranquility and self-reliance through the application of primitive recreation skills. These opportunities occur in a natural environment that normally offers a moderate degree of challenge and risk. Contact with other visitors both on the trail and while camped will be moderately frequent.

### C. MANAGERIAL SETTING

Management will emphasize sustaining and enhancing the natural ecosystem. Onsite management will involve routine visitor contact. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads and boundary portals. Contact is initiated by Forest personnel during routine duties. Information concerning protection of site-specific wilderness resources will be presented. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives and permits may be considered only when light-handed, less restricted measures have failed to achieve desired goals and objectives. Signs will be permitted within the area and will include the minimum number necessary to protect the wilderness resource, and for administration. Trails will normally be constructed, maintained, and managed to accommodate moderate use for the majority of the use season. The route will only modify natural conditions to the extent necessary to protect the environment and provide for moderately safe use by a user with limited experience and average physical ability. A moderate number of facilities will be provided or permitted, and only those necessary for the protection of the wilderness resource and the user. Natural materials will dominate. Dimensional and nonnative materials may be used but must remain not evident to the average user.

## OPPORTUNITY CLASS IV

### A. RESOURCE SETTING

Characterized by a predominantly unmodified natural environment where ecological and natural processes are in many locations substantially affected by the action of users. Environmental impacts are generally high in areas along major travel routes, along popular river corridors and lake shores, and near major entry points. Impacts often persist from year to year and there may be moderate loss of vegetation and soil at some sites. Impacts are readily apparent to most visitors.

### B. SOCIAL SETTING

Moderate to low opportunities for exploring and experiencing isolation from the sights and sounds of man with the probability of encountering other area users moderate to high. The user has the opportunity for a high degree of interaction with the natural environment, often with low or moderate challenge and risk. Contacts with other users will be relatively high much of the time, both on the trail and at campsites. Some parties will camp out of sight and sound of other parties, but this will not be common during the main-use season.

### C. MANAGERIAL SETTING

Management will be oriented to sustaining and enhancing the natural ecosystem. There will be frequent opportunity for visitor contact with management personnel. Necessary rules and regulations will be communicated to visitors outside the area, such as at trailheads and boundary portals. Special efforts will be taken to contact visitors. Information concerning wilderness management, user conflicts, fire prevention, and other pertinent subjects will be presented. Formal and informal user education programs will be initiated to inform users about what to expect and how to use the area for optimum benefit to all. Formal rules and regulations may be necessary to achieve management objectives and permits may be considered only when light-handed, less restricted measures have failed to achieve desired goals and objectives. Signs within the wilderness will be placed to aid in distributing and dispersing use, and for resource protection purposes. Trails will normally be constructed, maintained, and managed to accommodate heavy traffic for the majority of the use season. The routes will blend into the natural features of the area. Facilities and improvements may be provided and permitted for resource protection, user safety, and limited user convenience. Facilities when constructed will emphasize the use of natural materials. Dimensional and nonnative materials are acceptable but should harmonize with the natural environment.

TABLE K-1

SUMMARY OF RESOURCE AND SOCIAL SETTING COMPONENTS FOR EACH OPPORTUNITY CLASS

| | OPPORTUNITY CLASS I | OPPORTUNITY CLASS II | OPPORTUNITY CLASS III | OPPORTUNITY CLASS IV |
|---|---|---|---|---|
| RESOURCE SETTING: (General Description) | Unmodified natural environment | Unmodified natural environment | Unmodified natural environment | Predominantly unmodified natural environment |
| 1) Ecological Conditions | Not measurably affected by the action of users | Minimally affected by the action of users | Moderately affected by the action of users | Many locations substantially affected by the action of users |
| 2) Prevalence and Duration of Impact | Temporary loss of vegetation where camping occurs and along some travel routes. Typically recovers on an annual basis. | Minor loss of vegetation where camping occurs and along most travel routes. Most impacts recover on an annual basis. | Moderate loss of vegetation where camping occurs and along most travel routes. Impacts in some areas persist from year to year. | Moderate loss of vegetation and soil on major travel routes, campsites, and popular lake shores. Impacts persist from year to year. |
| 3) Visibility of Impacts | Not apparent to most visitors | Apparent to only a low number of visitors | Apparent to a moderate number of visitors | Impacts are readily apparent to most visitors |
| SOCIAL SETTING: (General Description) | Outstanding opportunity for isolation and solitude | High opportunity for isolation and solitude | Moderate opportunity for isolation and solitude | Moderate to low opportunities for isolation and solitude |
| 1) General Level of Encounters | Very infrequent | Low | Moderate | Moderate - High |
| 2) Degree of Challenge and Risk | Very High | High | Moderate | Moderate - Low |
| 3) Interparty Contacts while Traveling | Very Few | Low | Moderately Frequent | Relatively High |
| 4) Interparty Contacts at the Campsite | Non-existent | Fairly Low | Moderately Frequent | Common |

TABLE R-1 (CONTINUED)

SUMMARY OF MANAGERIAL SETTING COMPONENTS FOR EACH OPPORTUNITY CLASS

| MANAGERIAL SETTING (General Description) | OPPORTUNITY CLASS I<br>Strongly emphasize sustaining and enhancing the natural ecosystem | OPPORTUNITY CLASS II<br>Emphasize sustaining and enhancing the natural ecosystem | OPPORTUNITY CLASS III<br>Emphasize sustaining and enhancing the natural ecosystem | OPPORTUNITY CLASS IV<br>Emphasize sustaining and enhancing the natural ecosystem |
|---|---|---|---|---|
| 1) Contact with Management Personnel during Normal Use Season | Infrequent | Minimum | Routine | Frequent |
| 2) Rules and Regulations and Visitor Behavior | Will be communicated to visitors primarily outside of the wilderness in areas such as at trailheads and boundary portals | | Where necessary, on-site enforcement and communication of rules and regulations will be conducted | |
| 3) Formal and Informal User Education Programs | Will be initiated to inform users about what to expect and how to use the area for optimum benefit to all. | | | |
| 4) Formal Rules and Regulations | May be necessary to achieve management objectives and permits may be considered only when light-handed, less restricted measures have consistently failed to achieve desired goals and objectives | | | |
| 5) Presence and Extent of Signing | No trail signs present | Trail signs permitted. Will provide only minimum information necessary to protect the resource. | Signs will be permitted. Will include minimum number necessary to protect the resources and for administration. | Signs will be placed to aid in distributing and dispersing use, and for resource protection. |
| 6) General Level of Trail Construction and Maintenance | Trails will not be constructed. Maintenance conducted only to protect the resource. | Managed to accommodate light and infrequent travel. Maintained only for resource protection and minimal user safety. | Managed to accommodate moderate use. Maintained only for resource protection and moderate user safety. | Managed to accommodate heavy traffic. Maintained for resource protection, user safety and limited user convenience. |
| 7) Presence of Facilities | None provided or permitted | Very few provided or permitted and only for resource protection | Moderate number provided or permitted and only for user and resource protection | May be provided or permitted for resource protection and user safety |

*GPO 593-014 (1985)